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APRIL • 1954

Vegetable Grower

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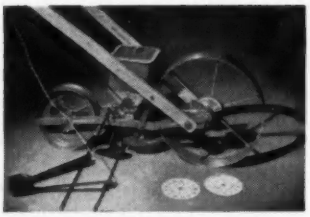

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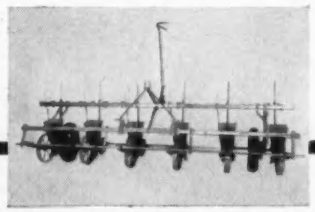

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Malathion more useful than ever!

The U.S. Department of Agriculture has accepted, as of January, 1954, the following additional claims for malathion—Cyanamid's new multi-purpose insecticide:

APPLES:
Codling moth
Plum curculio
Red-banded leaf roller
Bud moth

CHERRIES:
Black cherry aphid
Fruit tree leaf roller

PEARS:
Codling moth
Plum curculio
Fruit tree leaf roller
Red-banded leaf roller

PEACHES:
Spider mites:
European red mite, two-spotted mite
Oriental fruit moth
Plum curculio

PLUMS and PRUNES:
Mealy plum aphid

BEETS:
Aphids

CUCUMBERS, SQUASH and MELONS:
Aphids
Spider mites

EGGPLANT:
Spider mites
Aphids
Lace bug

PEPPERS: Aphids

PECANS:
Spider mites
Aphids

ORNAMENTALS:
Six additional scale insects, also lace bug, leaf miners, pine shoot moth, tent caterpillar

Previously accepted label claims for malathion:

APPLES: spider mites: European red mite, two-spotted mite, Willamette mite, clover mite; woolly apple aphid, green apple aphid, rosy apple aphid, Forbes scale

PEARS: spider mites, pear psylla

GRAPES: grape leafhopper, spider mites, mealybug

DATES: nitidulid beetle (dried fruit beetle)

TOMATOES: spider mites, aphids

BEANS: Mexican bean beetle, leafhopper, spider mites

CABBAGE, BROCCOLI, TURNIPS, MUSTARD, KALE: aphids, imported cabbage-worm, cabbage looper

PEAS: pea aphid

POTATOES: aphids

COTTON: aphids, spider mites

SEED ALFALFA: spider mites, aphids

ORNAMENTALS: Twenty label claims including aphids, mites, thrips, mealybugs, leafhoppers, scale insects, etc.

Malathion also controls FLIES, even DDT-resistant strains, in and around buildings which house domestic animals.

This extends the usefulness of malathion to growers by enlarging the range of crops and pests covered. Malathion is preferred by many growers because of its high efficiency in controlling insect pests and its wide margin of safety for the applicator.

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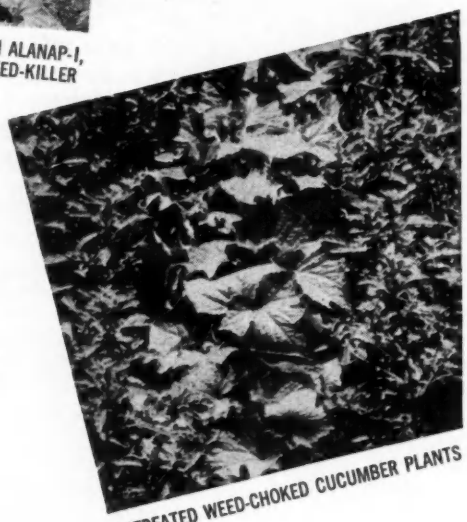

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Alanap-1 can save you up to $150 per acre by killing weeds before they appear. That means a greater profit margin...many more dollars for you. And you pay surprisingly little per acre for this amazing new chemical that kills a wide variety of weeds.

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American

VEGETABLE GROWER

REG. U. S. PAT. OFF.

(Commercial Vegetable Grower)

Vol. 2 APRIL, 1954 No. 4

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as modern equipment for Concentrate Spraying and Dusting

Summer and winter meetings of the horticultural societies have again stressed the advantages of concentrate spraying. The Buffalo Turbine Agricultural Equipment Company, who is the pioneer in concentrate and air blast spraying, has spent nine years in perfecting their sprayer-duster. The Buffalo Turbine is truly an all-purpose unit. It will distribute dust or liquid insecticides and fungicides and will apply both at the same time or separately. It will give you more rapid coverage with less material. The axial-flow blower sets up an air turbulence which atomizes spray or dust, giving greater penetration.

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There is a Buffalo Turbine that fits your needs. Fill out the coupon and let us send you additional facts about this modern applicator.

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Gentlemen—Please send me full information on the Buffalo Turbine Sprayer-Duster.

I have approximately _____ acres in vegetables consisting mostly of _____

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One chemical now does the job of controlling the major diseases on tomatoes. It's Du Pont "Manzate" fungicide. And it not only makes disease control a lot simpler, but also helps produce record yields. Read these typical reports:

"Averaged approximately 25 tons per acre. 'Manzate' did a good job in controlling anthracnose, early blight, and Septoria . . . was a very big factor in enabling me to market the largest yield I have ever grown". . . Chester C. Mauch, Lindsey, Ohio.

"Anthracnose, early blight, and Septoria have been real problems. This year we used a 100% 'Manzate' program, and disease control was the best we ever had. Quality was excellent, and our average yield of 24 tons per acre was the highest we ever had". . . Dean Keller, Blissfield, Mich.

"My crop was entirely free from disease . . . and graded an exceptionally high percentage of No. 1 tomatoes". . . Arthur G. Schroeder, Des Plaines, Ill.

Yes, use "Manzate" all season long. No other product has done as well in controlling tomato diseases and helping to grow high yields of top-quality fruit. Get "Manzate" in 3- or 25-lb. packages.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

This leaflet...tells how to get best results from this new Du Pont fungicide. See your dealer or write to Du Pont, Grasselli Chemicals Dept., Wilmington, Delaware.

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Attention— JUNIOR GROWERS

1954 program is out with annual meeting in Cincinnati

THIS is the 20th anniversary of the National Junior Vegetable Growers Association. The year-around activities of the association will culminate this year in Cincinnati, Ohio, on December 5-9. The 1954 program includes:

1. **Production and Marketing Contest.** This is a major project of the NJVGA. It involves the completion of a production project in which attention is given to organization, costs and returns, cultural practices and methods of marketing for a specific enterprise of the participant. Youngsters between the ages of 12 and 22 are eligible.

2. **National Demonstration Contest.** This contest stimulates careful planning, a thorough knowledge and then the ability to explain by word and action to an audience the why and how of various production practices, soil fertility and improvement methods, marketing procedures or the utilization of vegetable crops. Entrants must be at least 14 years of age and not over 21 as of December 1, 1954.

3. **National Judging, Grading and Identification Contest.** Involved in this contest is a knowledge of variety types, the identification of insects, diseases, nutrient deficiencies, weeds, grade defects, and grade standards. Entrants in this contest must also be at least 14 years of age and not over 21.

4. **Soil Fertility and Improvement Essay Contest.** This contest is open to any boy or girl who has a garden project involving any horticultural crop. It requires a report specifying methods and materials used by the individual in improving the productive capacity and fertility of the soil used in the garden project. To enroll it is not necessary that the individual participate in any other projects of the NJVGA.

5. **The Annual Convention.** The culmination of the year's program takes place during this four-day event, December 5-9. It includes educational trips, tours, contests, and the presentation of awards to winners in the four major projects.

Full details in regard to any one or all four of the contests are available from *National Junior Vegetable Growers Association, 103 French Hall, University of Massachusetts, Amherst, Mass.* THE END

LETTERS TO THE EDITOR

Original Asparagus Harvester

Dear Editor:

The modern, streamlined asparagus picker in your December issue is a great improvement over the original machine, a picture of which is enclosed. It may be of general interest to know that this idea of "an easier and better way to snap asparagus" was born on a hot June morning in our asparagus patch.

As my wife, three children, and myself were groaning along the rows, I mentioned to my wife that if I could just sit down and have someone pull me along the rows it would suit me fine. She politely informed me to stop my nonsense and get to work. One of our boys, too, thought we should be able to ride on this job.

The idea gained momentum, and the next day the contraption shown here, made of two steel wheels, a length of pipe for an axle, some 2x4's, etc., was ready.

When we pulled into the field, alongside a public road, I was secretly hoping that there would not be any traffic going by. Before we reached the other end of the field, however, we were all convinced it worked. And the occasional jests from friends going by did not worry us.

We used this outfit with good results, saving more than half on our usual time. Later on others became interested, including the local blacksmith who contributed to the improved modern machine which we now use, also. Last year we put a roof on ours so we could sit in the shade and to keep us dry when it rains.

Our joy at being instrumental in easing people's backs was rewarding. A friend of ours commented on our idea as follows: "You know, John, when the large manufacturers want to find an easier way to do things they pick out a few of the laziest men to figure it out."

De Motte, Ind. John Terborg

Keeping Tomatoes in Cold Storage

Dear Editor:

I have enjoyed reading AMERICAN VEGETABLE GROWER very much, and I would like to know if you could give me some information.

As a vegetable farmer in the western part of Tennessee, I am interested in growing tomatoes during our normal season, picking them while green, waxing, and keeping them by refrigeration for a period of two to four months before marketing them. I am also interested to know if cabbage and green peppers can be kept by refrigeration for later marketing.

Brownsville, Tenn. Jerry D. Kizer

Tomatoes can seldom be stored for more than four weeks. To do this, disease-free fruit from disease-free plants is essential. The same goes for peppers. Both vegetables should be stored at from 40° to 45° F. Cabbage can be stored at from 30° to 32° F. for four months.—Ed.

Asparagus Cutting Tools

Dear Editor:

I have noted in recent issues of AMERICAN VEGETABLE GROWER articles and letters on harvesting asparagus. I would like to know where I can purchase special tools for harvesting asparagus, one of which is a knife with a curved V-shaped blade. Is this a regular tool or is it something made by a grower for his individual needs?

Tallmadge, Ohio Solon C. Thayer

Use a linoleum knife or V-shaped bladed knife. Either one of these can be purchased at a hardware store.—Ed.

Editorial on County Agents

Dear Editor:

I want you to know that I read and appreciated the kind words you had to say in the January, 1954, issue of AMERICAN VEGETABLE GROWER concerning county agricultural agents.

With the overtime we put in nearly every day and the large number of evening meetings, we sometimes wonder whether our efforts are really being appreciated. As you so well said, salary is not what keeps the county agent so busily at his work. It is rather the satisfaction of working with the fine boys and girls in 4-H club work and with the adults who want us to work with them, who are appreciative of the work we do with and for them.

We doubly appreciate it, therefore, when people outside of our immediate contacts note and appreciate our efforts.

Milwaukee, Wis. S. S. Mathisen

Heat Lamps for Tomato Plants

Dear Editor:

I read your interesting article on the greenhouse industry in Michigan in a recent issue. I would like to have information dealing with the use of heat lamps for starting tomato plants, such as size and number of bulbs required. Also, at what height should they be placed?

Morengo, Ohio Hiram Bridenstine

Infra-red lamps used for brooding baby chicks are used—one per 4x4- or 5x5-foot area. The height will depend on the heat required.—Ed.

Pelleted Seed

Dear Editor:

In the January issue of AMERICAN VEGETABLE GROWER, I read with interest the article, "Pelleted Seed for Precision Planting." I would like to know if you can give me some information on where I could buy some pelleted celery seed.

Decatur, Mich. John De Feyter

Write Germain's Inc., Filcoat Division, 687 S. Clarence St., Los Angeles 23, Calif. —Ed.

NINE OUNCES OF PREVENTION
To keep you on the
SAFE SIDE

Toxic insecticides are only dangerous if users neglect to take proper precautions.

The U. S. D. A. and State Agricultural Experimental Stations have made studies of these insecticides and have determined the proper precautions to take. The manufacturers of these chemicals, too, recognize the need and have set up adequate precautions. All of these recommendations are yours for the asking. But—recommendations won't protect you unless you do something about it. A few ounces of prevention—through the use of Willson Agrisol® or Agri-Tepp® Respirators can keep you on the safe side.

Take the first step now. Write for the new bulletin describing the Willson line of protective equipment for agricultural hazards and colorful agricultural safety poster.

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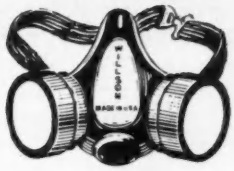

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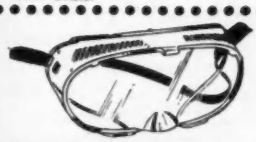

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Lightweight, easy-to-wear full face protection for heavy concentrations of insecticides, grain fumigants and anhydrous ammonia. In writing for information on these gas masks, be sure to state the service for which the mask is to be used.

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WILLSON PRODUCTS, INC.
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Your most efficient source of supplemental nitrogen . . .

Du Pont NuGREEN®

Fertilizer Compound

45% urea nitrogen in free-flowing shot form

Whenever your crops need supplemental nitrogen, "NuGreen" can supply it quickly, without waste, with less work. For greater yields of fruits, vegetables and certain field crops, too . . . use "NuGreen."

IN FOLIAGE SPRAYS. "NuGreen" sprays go to work immediately. The leaves absorb it quickly with no waste, no excess feeding either. Crops get the nitrogen they need even when roots are too dry, cold or wet to get nitrogen from the soil. Use it alone or in regular pest-control sprays.

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IN SOIL APPLICATIONS. Concentrated "NuGreen" saves most of the hauling and handling in ground or air application. Ideal for quick, efficient air application that fits needs of crop when wet soil, heavy crop growth or large acreage makes other methods impractical. Won't corrode equipment, either.

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"NuGreen" is your best buy in supplemental nitrogen—see your nearest distributor

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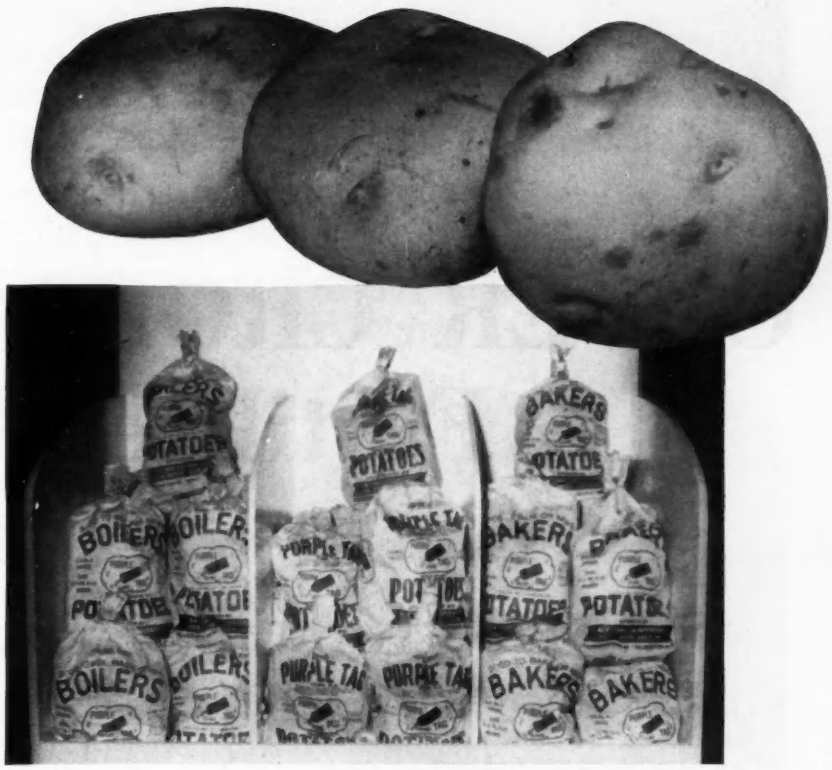
Is This the New Look in POTATOES?

Mrs. Consumer seems to like it . . . . And it all depends upon specific gravity!

By M. P. RASMUSSEN
Cornell University



Display of "Bakers," "Boilers," and check lots of unseparated potatoes, in large supermarket in Syracuse, N.Y.

DID YOUR wife ever tell you in great exasperation that no matter how she cooked a particular lot of potatoes half of them were still hard as stones and the other half had practically "cooked out?" Or did she lose a wee bit of religion when what she thought were "baking" potatoes came out of the oven soggy as a wet sock?

Such complaints, accompanied by a steady decline in per capita use of potatoes during the past several decades, led to experiments now going on in at least two states aimed at finding out how practical it is to offer "My Lady" potatoes that will come out the way she wants them, without any "if," "and," or "but". It isn't being done by any hocus-pocus or even with a crystal ball, but by the simple application of the age-old principle of specific gravity. It isn't even new because potato buyers for starch factories in Germany have been using specific gravity for many years in purchasing potatoes.

As is usually the case, a lot of spade work was done in laboratories by a number of scientists in the United States before any sort of a commercial approach to this problem could even be thought of. The list of workers is too long to reproduce here, but the names of Dr. Ora Smith of Cornell University and Dr. R. Kunkel of Colorado Agricultural and Mechanical College are probably most familiar to those studying this problem during recent years. Finally, commercial testing of the product in modern supermarkets would have been impossible without the development of a specific gravity machine or tank which could facilitate the separation of the potatoes as well as of washing and drying equipment which could handle the volume of potatoes required by such stores.

A specific gravity machine was developed at the Colorado A and M College as the result of the collaboration of a number of engineers (agricultural and otherwise) with horticulturists and others. In New York state as well as in Maine the machine has been built from the specifications set up at Colorado, and it has been found to work reasonably well although slight improvements have been made during the past two years and it seems likely that changes to speed up the machine will have to be made in the near future.

Of course the acid test of any new method of processing and merchandising potatoes could come only when the final product was submitted to Mrs. Consumer in the places where she usually bought potatoes. That's the only practicable way to find out whether or not she was both able and willing to pay enough more for the separated potatoes to defray the additional costs involved.

During 1949 a specific gravity retail sales study was conducted at Fort Collins and Loveland, Colo., for a one-week period. Sales of potatoes in two stores indicated that customers bought about twice as many "Baking" and "Boiling" potatoes as they did of

(Continued on page 30)

ABOUT OUR COVER

Yes, those are strawberry plants. Picture was taken in Holland where high price of berries grown mostly for export and availability of labor make it possible to force strawberries under "Dutch lights." In addition, a second crop may be obtained by covering the frames, reducing the natural day length in June and July from 16½ hours to 11 or 12 hours. First flowers appear two months after the beginning of the short day treatment and first fruits ripen one month later in September. Photo was furnished by Hester G. Kronenberg, Wageningen, Holland.—Ed.

Applying fertilizer to cover crop on Seabrook Farms before plowing. Fertilizer contains cyanamid as part of its nitrogen.

COVER CROPS *are* Fertilizer Factories

Great advances in fertilizer technique have been made at world-famous Seabrook Farms

By ELDON S. BANTA

FERTILIZER factories that work all winter long, processing and storing nitrogen, phosphorus, potash, and other plant food materials; that's the way Seabrook Farms' scientist, Dr. Frank App, looks upon the farm's vast acreages of cover crops.

The idea of growing cover crops to plow down and help enrich the soil's mineral and organic wealth is as old as farming itself. During the past quarter century we have seen this practice grow even more important in crop production. An old practice frequently comes up for reconsideration, and that is just what is happening to the cover crop practice.

Dr. App and his team of farmers and scientists at the Seabrook Farming Corporation are pioneering the way in this field, trying out new practices on most of their 50,000 acres of vegetable land in southern New Jersey. They are finding that by proper management of the cover crop to be plowed under preceding a particular vegetable crop, they can increase the yield of that vegetable and often with the use of less fertilizer out of the bag than was done before.

In essence, the findings at Seabrook Farms come to this: By applying more fertilizer to the cover crop and less directly on the vegetable crop that follows, yields of the vegetable have been stepped up. Not only this, but yields have been held more consistent from year to year. Crops seem to withstand drought conditions better too. In some instances less total fertilizer is being applied to some vegetable crops on these sandy loam soils of New Jersey and yet yields have increased. The sum total of the cover crop fertilizing system is the production of vegetables more economically.

From analyses of cover crops over a period of several years Dr. App has found that an acre of well-grown crop is equal in value to a ton of high-grade fertilizer. Thus an acre of good cover crop can make the grower from $20 to $40 over winter, and he doesn't turn a hand after the seed is sown.

Just what and how much is there in an acre of cover crop? Let's look at Seabrook Farms' data on an acre of unfertilized crimson clover, one of their good cover crops. This is what they found in it:

236 lbs. nitrogen	worth	$30.68
92 lbs. phosphate	worth	5.52
402 lbs. potash	worth	16.08
Total cash value per acre. . .		$52.28

Even if you subtract the seed cost of $5.98 and the labor for making the seeding, you still come out with about $40 per acre.

You say, why grow the cover crop? If the elements are there for the cover crop, they must be there for the vegetable too. But that isn't always so. The clover, being a legume, takes the 236 pounds of nitrogen from the air and stores it in the tops and roots. From here it is released gradually to the benefit of the following vegetable crop. The gradual decay of the cover crop gives a steady flow of nitrogen to the growing vegetable.

Potash is water soluble and much can leach away, but when 402 pounds are gradually released from the decaying clover plants it can be readily used by the growing vegetable. With phosphorus the opposite is true. It becomes insoluble if it remains free in the soil for very long. Other chemicals react with it, rendering the phosphorus unavailable to crop roots. But in the decaying cover crop of clover 92 pounds of phosphorus are released slowly and the vegetable crop can utilize most of it before becoming unavailable. This is the way Seabrook soils men view the fertilizer proposition.

Another factor should be mentioned. Some crops, especially legumes and grasses, are more efficient feeders in soil nutrients than others, as are many vegetables. Thus, such cover crops make good converters of plant food for the less efficient vegetable crops.

The same clover crop which sup-

Applying ammonium nitrate to spinach by airplane on Seabrook Farms.

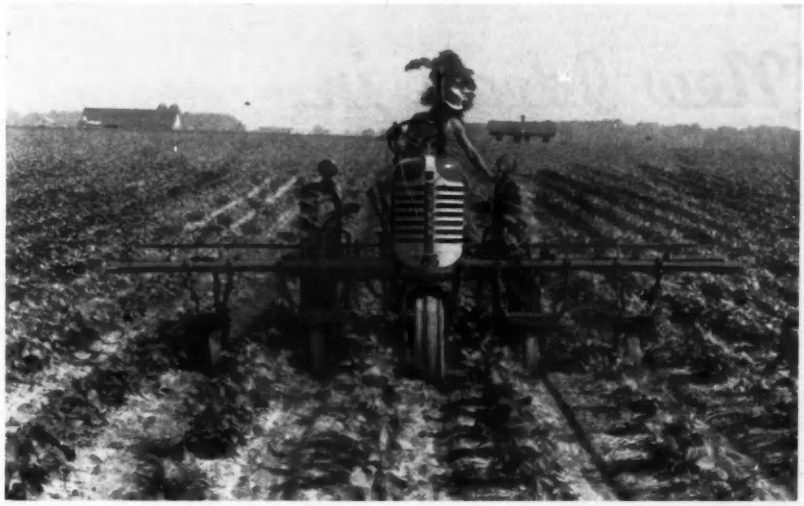
plied the above nutrients also turned in 6,000 pounds of dry, organic matter to each acre. This has many values, maybe even greater than the cash values described. It gives protection from erosion, helps hold moisture, increases efficiency of fertilizer used, gives better soil aeration, promotes better seedling emergence, and increases soil tilth.

Crops vary in their values for plowing under. Dr. App and assistants have made countless tests on such crops as crimson clover, rye, rye grass, wheat, barley, and various combinations of clover and grasses.

Let us consider rye for a moment. An acre of rye plowed under, with no fertilization, added just $5.92 worth of nitrogen, phosphorus, and potash to the soil, and 4,263 pounds of organic matter. But look what it added when 25 pounds of nitrogen was applied per acre on the rye crop. Then it left 13,900 pounds of dry residue which contained $46.75 worth of the plant food elements. That's what you call a big return from a small investment.

Many, many more sets of data can be pulled from the files in Seabrook Farms' soils laboratory and library to illustrate our point. But let us say this, the evidence is growing more convincing that for greater economy in vegetable production, we as growers must pay more attention to the growing of good cover crops.

Both laboratory tests and experience at Seabrook Farms support the practice of plowing under all or most of the nitrogen with the cover crop. This is opposite from the general practice of furnishing all the nitrogen directly to the vegetable crop. Up to now, calcium cyanimid has proved the best nitrogen carrier for plowing down at Seabrook Farms. Vegetables grown



Cultivating lima beans on Seabrook Farms. Use of better cover crops have increased bean yields.

under this practice include peas, spinach, broccoli, and sweet corn.

Before 1947 one pound of fertilizer produced 93.2 pounds of spinach. After the change to cover crop fertilization, each pound of fertilizer produced 217.6 pounds of spinach on the average. This would appear to be a decided advantage of the latter practice.

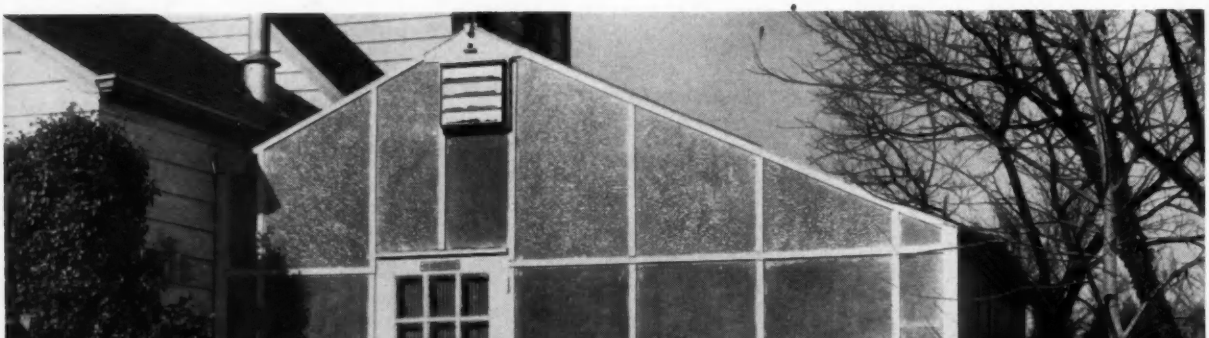
In checking the figures it is revealed that a saving of $70 per acre in fertilizer resulted, and at the same time the yield increased almost a half ton per acre. The figures showing what was used by the vegetable crop and what was lost are worth considering. Under the former practice only eight per cent of the 619 pounds of nitrogen applied was actually used by the crop. Under present practice 20 per cent is being used. Also, note the pounds of fertilizer elements in the residue or lost column. Again we see a saving in the practice.

Table I, page 34, shows yield data on other crops changed over from direct fertilization to applying all or most of the fertilizer to the cover crops. The change was made in 1949, so we look at average yields for the four years before and four years after 1949.

Spreading the nitrogen fertilizer before plowing is more economical than side dressing. Costs of application are less, as equipment is less expensive, time of application is greatly reduced, and it can be done at a time when no peak labor load exists on the farm.

An excellent case history of fertilizing a vegetable crop at Seabrook Farms is that of spinach. The record covers a period of 10 years, from 1943 through 1952. The information was

(Continued on page 34)



End view of plastic greenhouse of F. O. Reh, Belleville, Ill. While you cannot see in, you can see out without difficulty. Note louvred fan at ridge used to change air. There are no top vents.

New Ideas in GREENHOUSE Construction

Plastic-type materials offer several marked advantages over glass

By J. R. KAMP
University of Illinois

WHEN structural steel became available to the building trade, skyscrapers arose. Once the ball was rolling, picture windows, radiant heating, and butterfly roofs so changed the pattern of architectural home design that even the general public can do some reasonable guessing as to the age of a house.

While all this was going on in home and industrial architecture, the greenhouse remained unchanged. Only recently has the greenhouseman given serious thought to new ideas of greenhouse construction, and the liberating material was not structural steel but plastic.

For years plastics of various kinds have been used for temporary plant-growing structures, but the general idea has been cheapness. Plastic films over cloth screening have been used for coldframe covers, for instance, but they have been looked upon as glass substitutes, and poor ones at that. Now a new plastic material, known as Maxlite, is revolutionizing thought on greenhouse construction.

The new material comes in sheets 44 inches wide and 144 inches long. It is available in flat sheets or with corrugations about one inch deep and three inches from crest to crest. The sheets are one-fourth inch thick and sufficiently pliable to be bent into an arc easily. With release of pressure it returns to its original flat shape. It is sufficiently strong to be hit with a small hammer without cracking.

The new material is not completely transparent but rather translucent. It is slightly ropey and light passing through it is diffused. It is a poor conductor of heat as compared with glass so that it becomes warm rather than remaining icy cold in winter.

The properties described above offer some real advantages over glass for greenhouse construction. The ability to withstand sharp blows means no hail damage. The cost of hail insurance is no small item to the greenhouse owner and in case of damage there is still the loss of the crop. This one feature alone is important. The heat

An inside view of the corner of Mr. Reh's greenhouse which was taken to show the absence of shadows. Note how bright it is under the bench.

conductivity feature is also an advantage. In an ordinary greenhouse with its high humidity the condensation on the cold glass in winter makes drip gutters a necessity and still, dripping water makes pock marks in benches, and wet foliage encourages disease loss. The warmer Maxlite offers much less condensation, and drip can be eliminated entirely if air circulators are used.

The diffusion of light is a most important feature. This means that shadows are virtually eliminated. Light rays are coming in at all angles, and, as seen in the illustration, it is as light under a bench as above it. This means that plants may be double-decked without much loss to the lower layer. Note that even quite solid structures seem not to cast shadows in the Maxlite house while in the ordinary greenhouse the shadows are quite sharp. This means a reduction in shading damage from supporting elements.

The large size sheets available also provide a desirable construction feature. The setting of a multitude of individual panes of glass is a great expense even if done by your own men. A single sheet of Maxlite can be put in place in little time. This also will allow the elimination of much superstructure. Much of the superstructure in an ordinary greenhouse is concerned with holding the glass in place or with supporting its weight. The weight of glass is tremendous compared with same area of plastic.

There are some possible drawbacks. One is the cost. At the present time plastic costs about 95 cents per square foot. This is partially offset by the reduction in amount of superstructure necessary and by the decreased amount of labor to put it in place. The elimination of sashbars also reduces upkeep. There is no constant resetting of glass and repainting. The reduction in heat loss in winter should considerably reduce your fuel bill and, by the same token, in summer the heat will partly be kept out. The cooler summer house should make it more usable.

The next question is, how long is the plastic going to retain its good qualities? This is a question that cannot be entirely answered at the present time because the material is still too new. To begin with, the plastic transmits about 90 per cent of the total amount of light transmitted by new glass. This is said, however, to include more of the desirable rays and less of the undesirable ones. As the plastic grows older, there is a slight yellowing. This means a slight reduction in the transmission of yellow rays. However, these are not the most important rays as far as plant development is concerned. We should also remember that glass, too, becomes more opaque as it ages.

One warning is that plastic is NOT a GLASS SUBSTITUTE. It is an entirely new construction material and therefore should be used with its special qualities kept in mind. It cannot be set with putty in place of a sheet of glass because of its pliability. It will pull loose. It can be held, one sheet of the plastic to another, with a mastic cement especially made for the purpose. In this manner sheets as large as desired may be assembled. These may be bolted to a wooden or metal framework since the sheets may be sawed like wood and holes bored at will. Nails will not be satisfactory. The fusing of one sheet of plastic to another with the mastic cement allows the construction of a complete roof or side of a house without any possible leak.

The warmth of the plastic during the winter reduces probability of snow load. Use of corrugated sheets for the roof will allow the melted snow to flow off the roof down the troughs of the corrugation. Snow load not only endangers a structure but greatly reduces light at a time when light is of most value.

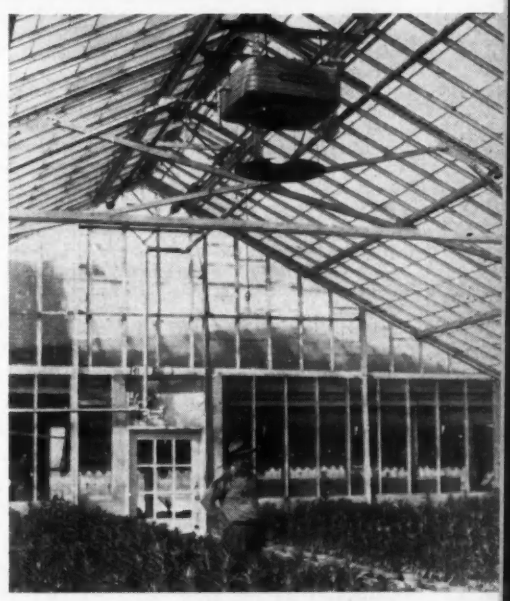
When considering a plastic house, consider also other possible ideas which might easily be incorporated into a new structure but which are put into an existing structure with less ease. For one thing consider ventilation. The present ventilators are almost unchanged from those used many generations ago, not necessarily because they are the best but because they already exist and we are familiar with them. The recent introduction of automatic ventilation, while an undeniable advance, merely substitutes electricity for the human arm. The ideas behind it are unchanged. Under present conditions it is often impossible to avoid cold drafts on plants. Ventilators at the soil line would take in fresh air without cold drafts and in a storm the groundline vents would not be blown off as is sometimes the case now. A small exhaust fan at the end of a house could easily carry off excessive humidity in winter and help cool the house in the summer, sucking in the cooler air from near the earth's surface.

The newer type heater shown in the illustrations is also well worthy of consideration. The Modine type is designed to keep even temperatures throughout the house. The steam or hot water is piped through coils in the heater and fans blow it out. The deflector then throws the heat to the roof from where it goes down the sides of the house and returns as an updraft in the center of the house. Nothing but WARM air blows on your plants. This type of heating greatly reduces the piping necessary.

The Herman Nelson Propellor Fantype heating unit shown in Mr. Reh's greenhouse carries louvre-like deflectors which shunt the heat to one side of a house with the return of the air from the other side. This, instead of keeping the house all a uniform temperature, allows warmhouse crops to be grown on one side and coolhouse crops on the other. THE END

Maxlite plastic material is the colorless form of Corrulux, manufactured by the Corrulux Division of Libby-Owens-Ford Glass Company, P. O. Box 20026, Houston 25, Texas. Modine heaters are made by Modine Manufacturing Company, Racine, Wis., and Herman Nelson heaters by the Herman Nelson Division of American Air Filter Company, Inc., Moline, Ill.

Herman Nelson propellor fantype heating unit at Reh greenhouse is designed to give uneven heating. Note small amount of piping.



An installation of Modine heaters at Quincy, Ill. Note deflector beneath heater. A deflector of proper size is vital to operation of the heater.

STATE NEWS

- **New Harvester Picks and Packs Florida Tomatoes**
- **Plastic Film — The "New Look" for Greenhouses**

FLORIDA—A mobile harvester for the harvesting of tomatoes has been constructed in Florida. The machine is capable of washing, grading, sizing, and packing tomatoes as a field operation. The tomatoes are picked and placed on conveyors as the machine travels through a tomato field, after which the complete packing house operation is performed on the harvester.

B. F. Wheeler, an outstanding pioneer vegetable and citrus grower of Oviedo, died recently, at the age of 76 years. Mr. Wheeler was president of the packing and shipping firm of Nelson & Company, Oviedo. He was a director of the B & W Canning Company in Groveland, of the Oklawaha Citrus Processing Co-operative in Leesburg, and of the Tavares & Gulf Railroad.—*George Talbott, FF&VA, Orlando.*

NEW JERSEY—The deadline for entries in New Jersey's 1954 vegetable queen contest has been set for June 18, according to James B. Woodford of Riverton, chairman of the N. J. vegetable queen committee. Actual judging of prospective queens is scheduled for July 8, at Mount Holly.

County boards of agriculture, granges, cooperative auction markets, sweet potato and asparagus groups, and other organizations are being urged to appoint local committees to select contestants.

New Jersey's queen will represent the Garden State in the national contest which will be held this year at Syracuse, N. Y., as a feature of the annual convention of the Vegetable Growers Association of America, November 29-December 2.

Last year's state queen, Miss Elaine Kernan of Bridgeton, won the national crown and is representing the national vegetable industry at many events, including appearances on radio and TV shows.

CALIFORNIA—Ideal potato planting weather has prevailed during the past month. It is thought that the planted acreage will be somewhat higher than originally estimated.

Francis P. Pusateri has been named manager of the Kern County Potato Growers Association. Mr. Pusateri assumed his new duties on March 15. He comes from Homedale, Idaho, where he has been employed by the J. C. Palumbo Produce Company.

Mr. Pusateri succeeds Don Maupin who resigned in order to accept a position as secretary-manager of the Long White Potato Advisory Board, which is the governing body of the newly created California marketing order for Early Irish Potatoes.

Harold W. Schwalm, who has been the agricultural extension service director for Kern County since February, 1951, recently has been appointed regional director of the southern California area.

John Hoyt, farm advisor from Fresno County, has been appointed director of extension in Kern County.—*David N. Wright, Farm Advisor, Bakersfield.*

Joseph S. Shelly, Wheeling, W. Va., has been named secretary of the Vegetable Growers Association of America, effective May 1, 1954. The announcement was made by A. Lee Towson, Jr., VGAA president. Mr. Shelly succeeds Dr. H. D. Brown of Ohio State University, Columbus.

The new Washington headquarters of VGAA in Room 528 Mills Building, 17th Street and Pennsylvania Avenue, N. W., one block west of the White House, will be opened by the new secretary.

Mr. Shelly is a native of Lehigh County, Pennsylvania. Since 1951 he has been extension specialist in consumer education and marketing with the West Virginia agricultural extension service at Wheeling.

MICHIGAN—Michigan Vegetable Council recently held its annual conference in East Lansing, with about 200 growers attending. C. A. Van Coevering, Grand Haven, was elected as the new president. Other officers elected were: Vice-president, Roy Burghart, Greenville; secretary, J. W. Rose, Okemos; and treasurer, Duane Baldwin, Stockbridge.

High point of interest in the subject matter portion of the conference was the session on irrigation. Robert Buskirk, cauliflower grower from Paw Paw, and Robert Miering, Carleton, general vegetable crop grower, emphasized the value of irrigation in their operations. Other discussions stressed the excellent response of shallow-rooted crops such as sweet corn and strawberries when supplemental irrigation was used. Slides showing irrigation being used to protect crops from as much as 8° F. attracted grower interest. —*J. W. Rose, Ext. Hort., East Lansing.*

KENTUCKY—A new greenhouse is on display at the Horticultural Farm, University of Kentucky, Lexington, which has been constructed of cheap lumber and polyethylene film. This greenhouse will be used for research studies in the use of polyethylene film in plant growing structures, and special consideration will be given to finding a cheap system of heating this type of house. The greenhouse has probably attracted more interest and attention from Kentucky growers than any project ever undertaken by the horticultural department.

Considering productiveness, quality, and drought resistance, a number of the newer vegetable varieties have shown excellent performance under Kentucky conditions.

Particularly outstanding performance under high temperature and drought conditions has been shown by O-S Hybrid cabbage, Cherry Belle radish, Golden Grain sweet corn, Salad Bowl leaf lettuce, Pearson tomato, Butternut squash, Iroquois muskmelon, Hollar Hybrid 104 pickling cucumber, Marketer slicing cucumber, and Valentine rhubarb. Some of these varieties have been available for several years, especially the Pearson tomato, but only recently have been introduced into Kentucky.

The Wade bush bean has not yielded quite as high as Top Crop, but it has been superior to Top Crop in intensity of green color and quality of pods. Fordhook 242 continues to be the outstanding lima bean variety in Kentucky.

Valiant tomato has been one of the most dependable early varieties ever grown in Kentucky. Early Giant Hybrid, however, appears after four years of trial to be somewhat superior to Valiant in early productiveness. Vaughan's Early Hybrid has also performed exceptionally well.

Bibb lettuce and Kentucky Wonder pole beans have been grown for many years in Kentucky. So far, neither one has ever been seriously challenged by any of the new varieties of these two vegetables, at least in Kentucky. Kentucky Wonder pole beans consistently bring a premium over the finest bush beans on local Kentucky markets. Bibb lettuce prices often exceed the finest leaf lettuce by 20 cents per pound.

The growing of Bibb lettuce seems particularly popular in Kentucky. This very dark green-leafed lettuce, with almost smooth leaves with oval ends, is ready for cutting just after it forms a beautiful rosette of leaves. If cutting is delayed very long after this stage, plants generally start forming a seed stock and of course are then unfit for market. Bibb lettuce has a distinctly different flavor from either head lettuce or common leaf lettuce. The dark green leaves make an exceptionally attractive tossed salad or a beautiful garnish for fruit salad.—*J. Edward Klinker.*

OHIO—The top tomato growers in the Ohio Top Ten Tomato Club were honored at the recent Canners' and Fieldmen's Conference held at Ohio State University, Columbus. The state champions are Chester Mauch of Lindsey and Otto Cordes of Na-

Champion growers in Ohio Top Ten Tomato Club proudly exhibit engraved gold watches awarded them in recognition of their high tomato yields in 1953. Seated, from left: Chester Mauch of Lindsey and Otto Cordes of Napoleon. Standing, from left: A. L. Sorenson, state director of agriculture, Columbus; O. C. Croy, assistant director, Ohio agricultural extension service, Columbus; and L. S. Hartley, manager, agricultural department, B&O RR, Baltimore, Md.

poleon. Mauch, growing tomatoes under contract with the H. J. Heinz Co., Fremont, produced an average yield of 24.04 tons per acre on 7.18 acres, and Cordes had 23.36 tons per acre on 15.80 acres. Cordes contracted with the Campbell Soup Company, Napoleon. County champions from 18 northwestern Ohio counties were also honored.

The club, sponsored by the Ohio Canners Association, the B&O RR, and the agricultural extension service of Ohio State University, recognizes the top tomato growers each year. State winners receive engraved gold watches, county winners get pen and pencil sets, and all growers are presented with engraved framed certificates. The participating processors purchase the certificates and the B&O presents the watches and pen and pencil sets.

Participating processors will soon be entering their growers in the 1954 club. Club members are growers with high yields in the top 10 per cent of all growers contracting with the processors.

The project has done a lot to stimulate interest in better production practices. For example, in 1947—the first year the club was in existence—the average fertilizer application per club member was 600 pounds per acre of 3-12-12 or equivalent, while last year this had increased to more than 800 pounds of the same analysis. About 98 per cent of the growers used a starter fertilizer in the transplanter water last year.

Nearly all of the growers in the club last year (151 out of 157) either sprayed or dusted to control foliage diseases, the average application being 4.39 times per grower as compared with only 2.67 times in 1947. Ground-spraying equipment was used exclusively in 1953 by 87 per cent of these growers.

The club has also helped to increase the per-acre production of tomatoes in Ohio. For example, the average yield for the three-year period when the club started was 6.27 compared with 10.03 tons for the last three years, 1951-53. Last year's yield of 11.6 tons per acre was the highest on record for the state. —*E. C. Wittmeyer, Ext. Hort., Columbus.*

WISCONSIN—Vegetable producers in this state are increasing their use of chemicals for the control of weeds and the list of crops in which weeds can be controlled through chemicals in also increasing in number each year. Chemical weed killers are now available to Wisconsin vegetable producers for controlling weeds in asparagus, snap beans, lima beans, red beets, cabbage, carrots, celery, onions, parsnips, peas, potatoes, sweet corn, and vine crops.

(Continued on next page)

Today's shoppers buy by eye

NEW WAX-SHINE

—a product of Johnson's Wax steps up eye appeal, protects quality

Improve the "eye-appeal" of your produce and sales increase automatically.

Vegetables that glow with garden-freshness in the store move into shopping baskets quickly . . . and shoppers come back another day for more. Wax-Shine creates that *just-picked* appearance that steps up sales of tomatoes, peppers, cucumbers and other fresh produce.

Wax-Shine is an odorless, tasteless wax product that adds effective sales appeal to your produce. Treated with Wax-Shine, your choice vegetables grade in the *fancy* class . . . and shoppers gladly pay a premium price. Wax-Shine also protects freshness during shipment, storage and display. It reduces shrinkage and increases store life. Thus, Wax-Shine offers many money-saving and profit-making advantages!

Packers, shippers, jobbers and retailers all benefit when Wax-Shine is used. It is easy and economical to apply and shines without buffing. For full information on Johnson's Wax-Shine, contact your Johnson distributor or write to:

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Du Pont Announces

Karmex® W

Herbicide

For low-cost control of weeds in asparagus

KARMEX® W a new substituted urea herbicide, provides growers new efficiency and economies in controlling weeds in established asparagus beds. Extremely low rates of application have proven highly effective in field trials conducted in all important asparagus-growing areas.

ECONOMICAL Low dosages, 1 to 4 pounds per acre, keep asparagus beds free of annual weeds and grasses for 6 weeks or more.

EASY TO USE A wettable powder, ready to mix with water. Apply as a pre-emergence blanket spray and again as soon as possible following completion of harvest.

OTHER FARM USES Use "Karmex" W at higher rates of application to kill weeds and grass around farmyards and building areas for a season or longer.

Get Karmex® W at Your Dealer's Now!

See for yourself how this new herbicide will cut down on your weed-control costs this spring. Consult your local agricultural authority on dosages and timing of applications.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

DU PONT REG. U.S. PAT. OFF. **Karmex® W** *Herbicide*

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

STATE NEWS

(Continued from page 15)

One of the newer chemicals being recommended to growers for the first time this season is "Alanap," or N-1. This chemical is a white powder which is readily soluble in water. Since it is most effective against weeds just as they begin to sprout, it must be applied before any weeds have emerged from the soil. It is particularly useful for weeding vine crops such as cucumbers, muskmelons, and watermelons.

Last season in the pickling cucumber growing section of the central Wisconsin Sand area, several growers used Alanap at the rate of four pounds per acre as a pre-emergence spray, after the crop was planted but before any cucumber seedlings came up. Excellent weed control was gained where the grower was fortunate enough to get a shower of rain or where he applied a light irrigation a short time after application of the material.

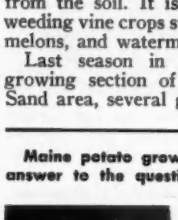
In cases where the soil surface remained dry for several weeks after planting, weed control results were poor. This indicates the importance of having a relatively high level of soil moisture at the soil surface when using this chemical.

A number of cucumber and muskmelon growers in central and southern Wisconsin are planning to try Alanap this coming season. We are also suggesting Alanap as one of the chemicals for weed control in asparagus plantings this year.

Growers can obtain our 1954 recommendations, "Chemical Weeding of Vegetable Crops," by writing to the Department of Horticulture, University of Wisconsin, Madison 6.

A new circular entitled, "How to Grow Russet Burbanks in Wisconsin," is also available from the department of horticulture.—*John A. Schoenemann, Ext. Spec. Veg. Crops, U. of Wis., Madison 6.*

Maine potato growers are going to get the answer to the question, "How Can the Consumption of Potatoes Be Increased?" when William M. Case, executive director of the National Potato Council, Washington, D. C., addresses them on this subject April 7, during Farm and Home Week at the University of Maine, Orono. Mr. Case will be the featured speaker on the dinner program.



W. M. Case

Case has had a wide and varied career in the potato industry. For several years he was extension marketing specialist in Colorado. Following this experience he worked in Washington, D. C., in the potato division of the USDA and later with the Commodity Credit Corporation during potato price support programs.

Before accepting his present position he was executive secretary of the Red River Potato Growers Association.

NEW HAMPSHIRE—Dr. Albert F. Yeager, originator of Buttercup squash, New Hampshire midget watermelon, and over 30 other fruit and vegetable varieties was awarded the Stevenson Memorial Gold Medal by the Manitoba Horticultural Association of Canada on February 18 at the Manitoba Horticultural Association convention at Winnipeg, Manitoba, Canada.

The Stevenson medal was instituted in memory of the late A. P. Stevenson of Pine Grove Nursery, Morden, Manitoba. It is awarded to individuals for conspicuous

CALENDAR OF COMING MEETINGS & EXHIBITS

Apr. 5–8—National Packaging Exposition, Atlantic City.

Apr. 7—Home Horticultural Day, University of New Hampshire, Durham. Topics of interest to the home gardener.

Apr. 6–8—University of Maine Farm and Home Week, Orono. Apr. 6—Home Vegetable Garden in A.M.; Market Garden all day; Apr. 7—Processing Crops.—Robt. W. Paulson, Veg. Spec., Orono.

Apr. 26–28—Conference on transportation of fresh fruits and vegetables, University of California campus, Davis.

Sept. 23–25—Texas Citrus and Vegetable Growers and Shippers, Inc., annual meeting, Baker and Adolphus hotels, Dallas.—Austin E. Anson, Exe. Mgr., 306 E. Jackson, Harlingen.

Sept. 28–30—Florida Fruit and Vegetable Association annual meeting, Sans Souci Hotel, Miami Beach. Association headquarters: 4401 E. Colonial Drive, Orlando.

Oct. 3–5—Produce Prepackaging Association fourth annual conference and exposition, The Shoreham Hotel, Washington, D. C.—Henry S. Levkoff, General Conference Chairman, Standard Folding Trays Corp., Brooklyn, N. Y. New address of association: 500 Fifth Ave., New York 36, N. Y.

Nov. 29–Dec. 2—Vegetable Growers Association of America annual convention, Syracuse, N. Y.—Joseph S. Shelly, Sec'y, 528 Mills Bldg., Washington, D. C.

Dec. 5–9—National Junior Vegetable Growers Association 20th annual convention, Cincinnati, Ohio.—Grant B. Snyder, Adult Advisor, Univ. of Mass., Amherst.

achievement in the field of practical horticulture. Many of the hardy varieties developed by Dr. Yeager have been introduced successfully into Canadian prairie areas.—*E. J. Rasmussen, Ext. Hort., Durham.*

MARYLAND—Baltimore County Vegetable Growers' Association met on March 10, with approximately 50 growers attending.

Weed control and new varieties were discussions of great interest and were led by Dr. F. C. Stark of the University of Maryland. The outlook for vegetable crops in 1954, a subject that always commands a lot of interest, was presented by Charles Porter of the State Department of Markets, while the needed modifications in packaging methods were discussed by Harold Hoecker, Maryland extension economist.

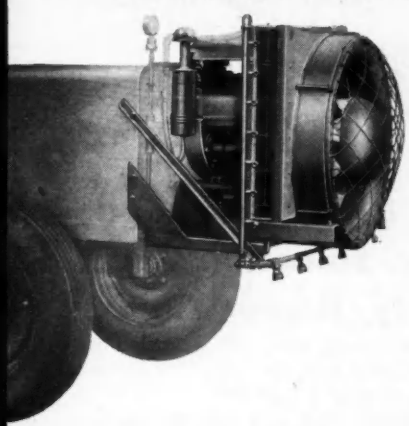
John B. Feard, Jr., of Hydes was elected president of the association for 1954; A. Morris Todd, Jr., Dundalk, vice-president; and George P. Stratmann, Sparrows Point, secretary-treasurer.—*F. C. Stark, Jr., Sec'y, Md. VGA, College Park.*

Top Jersey-Delaware tomato men talk it over at Delaware Farm and Home Show. Frederick W. Haas of Middletown, Del., shows first prize awarded him by Delaware Ten Ton Tomato Club to Everett Abrams of Indian Mills, N. J., top man in Jersey Ten-Ton Club. Both growers produced tomato crops averaging over 24 tons per acre last summer, using advanced fertilization and cultivation practices during growing season, combined with a Rhothane-Dithane organic spray program. Haas has been one of Delaware's winning growers for three years and Abrams has been New Jersey's top man twice.

MIST SPRAY YOUR ROW CROPS FOR HIGHER YIELDS, LOWER COSTS

The new John Bean Speedaire Row Crop Spreader blankets a field of potatoes.

THE JOHN BEAN SPEEDAIRE



a performance-proven row crop air sprayer

Faster, more thorough coverage with savings in time and spray materials are being reported by every grower who used the SPEEDAIRE during the past season. Dilute, low-gallonage, or concentrate spraying are a matter of choice. Problems of uneven terrain and unwieldy booms can be ignored. The spray pattern can be easily controlled to meet wind and crop conditions. You get all the advantages of modern air-type spraying with this new John Bean Speedaire conversion unit for high pressure field-crop sprayers.

The Speedaire can be easily mounted on your present high-pressure sprayer of 20 G.P.M. capacity or larger.

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Stabilized formulation of Parathion. The 15-W in a dustless wettable powder for greater safety.

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Washington VEGETABLE LETTER

Reviewing the potato debacle

By LARSTON D. FARRAR
Washington Correspondent
American Vegetable Grower

ONE of the vexing problems that perturbs U. S. potato growers today is liable to become even more annoying in the future unless Congress can work out some plan to solve it.

The problem revolves around the fact that Canada now has the right, under our present Reciprocal Trade Agreements Act, to ship some 2.5 million bushels of seed stock potatoes and 1.5 million bushels of table stock potatoes into the U. S. under a quota that calls for a tariff of only 37½ cents a bushel. After this quota of four million bushels has been exceeded, the Canadians have to pay 75 cents a bushel tariff on the potatoes they ship into the U. S.

Yet, because of the fact that Canadian producers in New Brunswick Province, for instance, can ship their potatoes to a point such as Jacksonville, Fla., for from 40 to 45 cents a bushel, while Maine growers must pay about $1 a bushel to send their potatoes by train to southern points, the Canadian can undersell American producers even in U. S. markets.

AT the same time, until comparatively recently, the Canadian government was guaranteeing Canadian growers $1.25 a barrel for potatoes sold, no matter where the spuds might be marketed. This made it both possible and profitable for Canadian producers to ship potatoes to the U. S. and undersell U. S. producers.

Uncle Sam's Treasury Department finally has wangled an agreement with Canadian authorities *not* to subsidize growers there who ship potatoes into the U. S. market. This has halted many of the shipments, but no one in Washington knows how long the Canadians are going to honor it.

ONE congressman who is himself a potato grower and has kept up with developments in this field commented recently:

"Potato men in Maine—and many other areas—lost their shirts this past year. There's no doubt about it. When the Canadian shipments began to arrive at southern ports, it depressed a market that already was very de-

pressed. The Canadians actually could sell potatoes in Jacksonville, Fla., at a price that would not even cover the cost of Maine growers' shipping charges to the same point. Canadians were selling their potatoes in Florida for $1 a bushel, while Maine growers had to pay $1 merely to ship their potatoes to Florida. Of course, they stopped shipping.

"The growers found that they had no recourse to demand that the Canadian shipments up to quota be stopped, for potatoes no longer are under subsidy in this country.

"We appealed to the Treasury—and, at long last, we obtained some results.

"During World War II, for the first time in history, potato growers were guaranteed a certain price by Uncle Sam. This subsidy continued for years after World War II, and now everybody who can read knows of the results. The potato surplus became a national scandal, with Department of Agriculture specialists burning potatoes while the newsreel cameras grinded.

"Then potatoes were taken out from under the price guarantee program.

"For one year, demand was good and growers were happy. The next year, things were not so good, but there still were too many potatoes grown. This past year, growers have literally been put through the economic wringer, with hundreds and thousands of them losing their shirts.

"There is a growing number calling for government guarantees. But the majority still seem to want to stand on their own feet and not have any part of the government. If this majority has its way, there will be fewer growers, and, eventually, prices will firm up again. Meantime, the situation is chaotic, economically, and is liable to be that way for a long time."

MANY potato growers supported the move to amend the Cotton Quota Act, passed recently and signed by the President, which made potatoes eligible for purchase under Section 32 funds, at the discretion of the Secretary of Agriculture. Many in the industry considered it a bitter blow when the Secretary announced that he had decided not to use Section 32 funds to buy potatoes for the school lunch program and for other charitable or public welfare agencies.

"The Secretary had the choice, and he made it," the Congressman said. "So far, the reaction has not been adverse. But lots of potato growers really bit their lips when he did announce his decision. And a lot of others just tightened their jaws, clinched their fists, and decided to work harder next year."

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✓ "...can spray 100 acres of tomatoes in a day..."
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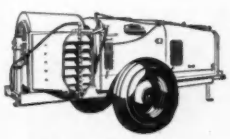
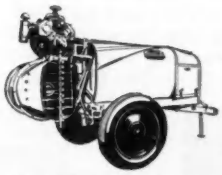


Concentrate Field Sprayer



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Concentrate spraying is benefiting these and other important growers in two profit-making ways: (1) cuts operational costs; (2) helps produce high-quality, premium-priced yields.

Myers Concentrate Sprayers require only one-fourth the water needed by dilute equipment. Fewer stops for water save spraying time. Control is better, too, because with low-water mixtures there's no run-off. Spray material goes further.

The high velocity Myers Concentrate Sprayer assures even distribution of the spray mixture in small droplets over the entire plant. There's no undesirable spotting from excessive spray deposits. Let your nearby Myers dealer explain these and other features of the Concentrate Sprayer.

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Concentrated power is gas-saving power! Why? Because the smaller the engine, the less gas it usually uses. Ford's new truck engines develop as much power as other engines *much larger* in size! How? With new high compression and overhead valves, they *burn gas better*. With new short-stroke design they *lose less power to engine friction*. And with new deep-block design increasing structural strength, Ford engines *run smoother*.

For more details, see your Ford Dealer, or write: Ford Division, Ford Motor Company, Dept. T-66, Box 658, Dearborn, Michigan.

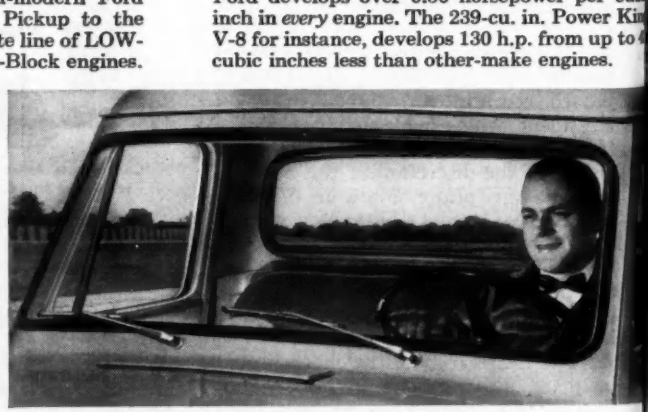
NEW ULTRA-MODERN, HIGH-COMPRESSION POWER IN EVERY MODEL! You get the concentrated power of an ultra-modern Ford engine in over 220 truck models, from the smallest Pickup to the 60,000 lb. G.C.W. BIG JOBS. Only Ford offers a complete line of LOW-FRICTION, High-Compression, Overhead-Valve, Deep-Block engines.

POWER CONCENTRATION IN FIVE FORD TRUCK ENGINE

	Horse-power	Cubic Inch Displacement	Horsepower per cu.
Cost Clipper Six	115	223	0.5
Power King V-8	130	239	0.5
Power King V-8	138	256	0.5
Cargo King V-8	152	279	0.5
Cargo King V-8	170	317	0.5

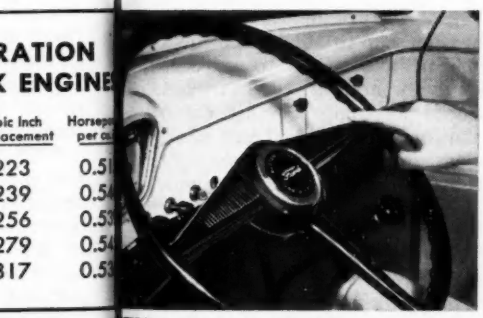
NOW! More POWER PER CUBIC INCH! On Ford develops over 0.50 horsepower per cub inch in *every* engine. The 239-cu. in. Power Kin V-8 for instance, develops 130 h.p. from up to cubic inches less than other-make engines.

1. NEW LOW-FRICTION ENGINES are built to give you *direct* savings in terms of lower gas, oil and maintenance costs. And just as important are *indirect* savings, like time saved by the extra power that helps get jobs done fast on the road or in tough farm going.



2. NEW 3-MAN DRIVERIZED CABS plus new driving controls like Power Steering, Power Brakes and Fordomatic Drive, save money by helping make driving safer and easier. Cabs have exclusive Ford seat shock snubbers. New woven plastic seat upholstery "breathes" like cloth. Big, curved one-piece windshield for visibility unlimited.

Sweetest handling trucks on the road. Ford BIG JOBS offer new Power Steering, new Driverized Cabs, many other features to help make truck driving easier.



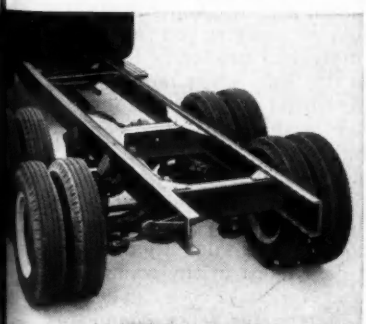
NEW POWER STEERING cuts steering effort as much as 75%. Ford *Master-Guide* Power Steering is *standard* on Series T-800 and is optional at extra cost on most other BIG JOBS.

NEW VACUUM BOOSTED POWER BRAKES now available on Ford half-tonners make stopping up to one-fourth easier.* Pressure needed to stop truck won't break ordinary light bulb.

NEW FORDOMATIC DRIVE in all light-duty Series. Fully automatic! No clutching! Ideal for off-road work: no engine-stalling at low wheel speeds.*

*Available at worth-while extra cost.

New 6½-ft. Ford Pickup now offers vacuum boosted Power Brakes and Fordomatic Drive at slight extra cost.



3. NEW GREATER CAPACITY! New factory-built 6-wheelers up to 60,000 lbs. G.C.W. Two new Cab Forward BIG JOBS. Each of over 220 Ford models has low curb weight, top payload.

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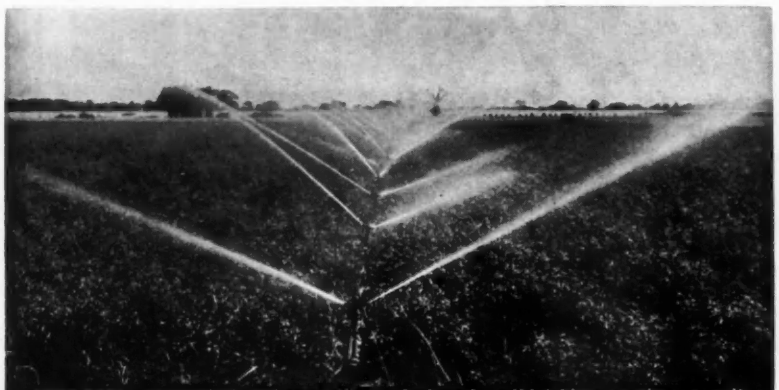

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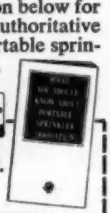
- why gamble with "ol' man weather" or "make shift" irrigation? Investigate . . . mail the coupon below for a factual and authoritative booklet on portable sprinkler irrigation.



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Gentlemen: Please send me my free copy of "What you should know about Portable Sprinkler Irrigation" and name of nearest SHUR-RANE *dealer.*

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THE NEW ANF

And what it means to growers

By JAMES H. WEST

WHAT can very well develop into the most outstanding contribution to the solution of the "farm problem" was put into effect at the close of 1953. This was the acquisition of ownership of the American Fruit Growers, Inc., and with it the well-known brand name, Blue Goose, by American National Foods, Inc., a co-operative organized in 1937 under the name of American National Co-operative Exchange, Inc.

American Fruit Growers, Inc., established in 1919, was a national production, packing, and marketing organization with offices in most of the major terminal food markets of the country. American National Foods was formed by a number of the leading co-operative commodity sales associations around the country. Among these are Maine Potato Growers, Eatmor Cranberries, Idaho Potatoes, Skookum Apples, and Colorado Peach Growers.

This is a picture of farm people working together to solve their own problems without going to government. If the money we get as farmers is to mean anything it must come from our own efforts and not from tax dollars. In fact, the latter is a very dangerous substitute. What is given by government in any form can be taken away just as readily.

Bargaining Power

Agriculture is the only segment of our economy which does not set the price for the articles it produces. Heretofore, we shipped, transported, or carried our fruit and vegetable products to the market and asked humbly, with hat in hand, what will you give me? Or were told we will give you so much.

As individual producers this is all we can do. But, when thousands of producers band together and agree to sell their products co-operatively the bargaining power of the individual is multiplied just that many times.

Here's the catch—you must be big enough to affect the market. Small, local co-operative sales organizations cannot do it alone in any commodity. American National Foods can develop into a pattern for other commodity groups to follow.

There are problems, many of them. Such an endeavor calls for the wholehearted willingness on the part of

---

The author, JAMES WEST, prominent Ohio nurseryman, is a director of American National Foods.

member associations to sacrifice their individual identity to a certain degree. There must be a consecrated desire on the part of American National Foods to cast its lot with other groups for the betterment of the total group. These are human problems and can always be resolved when a sincere desire exists to do so.

Businessmen Head Group

The operating heads of the member associations which make up American National Foods are hard-headed businessmen who have been doing an excellent job in their respective fields. In American National Foods they see the possibilities of much greater advantage to their members through a nationwide sales organization. They would not have gone into it if they had not.

The ramifications which this group can properly engage in are almost limitless—perhaps limited only by the imagination of its board of directors and management. THE END

TAX WRITE-OFF FOR NEW STORAGES

A BILL which will help growers who have new storages and which will perhaps encourage the building of contemplated farm storage facilities is now before the Ways and Means Committee of the House of Representatives.

H.R. 7382, introduced by Representative Karl King of Pennsylvania, who has extensive acreages in vegetables in the Keystone State, would extend to fruit and vegetable storage facilities the same tax privileges now enjoyed by grain storages, that is, to amortize the cost of storages built, through tax write-off, over a five-year period.

The bill would allow the grower to take advantage of this tax write-off during the period in which he is having to meet payments on the storage. This could be very important should a low price year occur during this period.

It should be understood that H.R. 7382 merely provides the opportunity for the grower to shift this tax burden to a time when he is not faced with meeting heavy payments on his new storage—it is not a method of evading taxes.

It isn't compulsory that the grower write-off his storage in five years. He can set up the amortization schedule to suit his needs. But it will allow the grower who needs this assistance to do so.

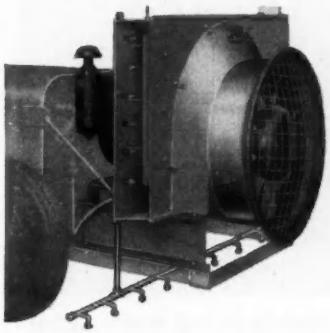
If you approve or disapprove of this measure, get in touch with your congressmen.

NOW! Announcing...

BES·BLO RC for Row Crops

3 SIZES— One to fit your acreage

BESLER—originator of famous BES·BLO, the pioneer blower attachment — now presents a full line of BES·BLO airstream sprayer attachments for row crop use. Ask for a dealer demonstration — see it outperform in speed — thorough coverage — economy of operation. One test will show you why its superior features assure better pest control and bigger yield.



"DRIVING AIR" assures penetration and uniform coverage of spray pattern, widths to 80 feet — uses concentrate or dilute sprays — spray pattern adjustable for any crop or weather condition — easily maneuvered — equally effective in rough terrain — does the job faster, better, at less cost.

Quickly, Easily Attached to your present high pressure sprayer to convert it into the fast, modern, most thorough way of row crop spraying.

3 SIZES Priced from $645 to $1297 (F.O.B. Oakland)

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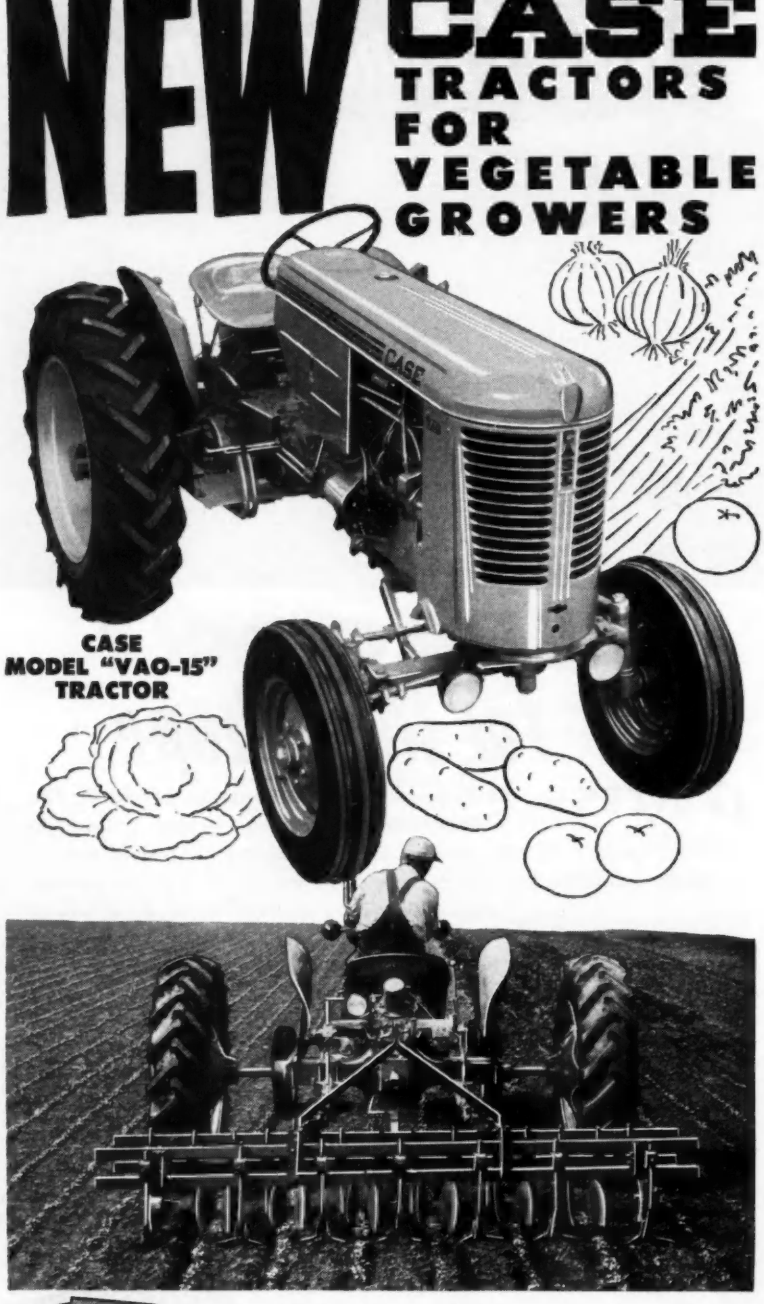
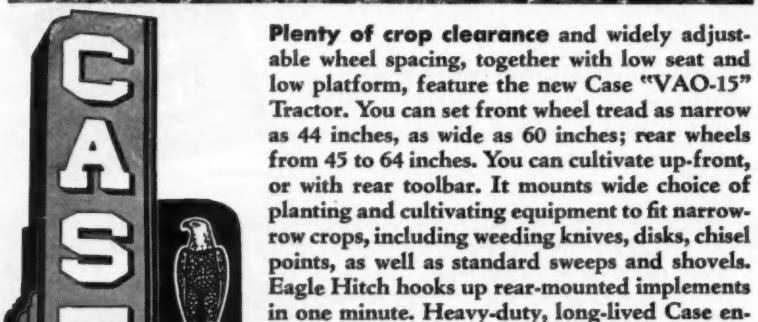
NEW CASE TRACTORS FOR VEGETABLE GROWERS



CASE MODEL "VAO-15" TRACTOR



Plenty of crop clearance and widely adjustable wheel spacing, together with low seat and low platform, feature the new Case "VAO-15" Tractor. You can set front wheel tread as narrow as 44 inches, as wide as 60 inches; rear wheels from 45 to 64 inches. You can cultivate up-front, or with rear toolbar. It mounts wide choice of planting and cultivating equipment to fit narrow-row crops, including weeding knives, disks, chisel points, as well as standard sweeps and shovels. Eagle Hitch hooks up rear-mounted implements in one minute. Heavy-duty, long-lived Case engine gives you eager 2-plow power, saves you money on upkeep. See your Case dealer; write for pictorial folder. J. I. Case Co., Dept. D-214, Racine, Wis.

Irene Scott's SOIL PROGRAM

Miss Scott, 17-year old 4-H club member of Littleton, Colo., was the national winner of the National Junior Vegetable Growers Association 1953 "Soil Maintenance and Improvement" essay contest. The contest was held during the NJVGA convention in Tulsa, Okla., in December. Her essay, presented here, is an example of the splendid work in vegetable growing that is being done by the up and coming generation.—Ed.

FOR my 4-H gardening project this year (1953) I used about one-sixth of our acre homesite. The area fronts on a high slanting street paralleled by a small irrigation ditch. The land drop is about five feet from south to north.

When we moved on this acre three years ago, it looked like a dumping ground overrun with large alfalfa clumps. After a cleanup, Daddy had it plowed with a heavy tractor, putting the roots in the subsoil.

This irrigation ditch was "eating into" the land and was much deeper and narrower than necessary due to another drop from east to west. Daddy had a caterpillar and bulldozer push the dirt from the road barpit into the ditch. Then I spaded out a new, more shallow ditch. With flat rocks from a nearby river I rip-rapped the frontage.

Irene Practices Soil Conservation

My next topsoil saver was to slant the rows where they had been straight. With the irrigating thus "slowed," washing was lessened.

The water in the ditch flowed at uncertain times. So I decided upon hose irrigation from the city. I set the water at night. It goes further. I seldom sprinkle. It packs the soil and much is lost in evaporation. Rightly used, water is a cheap plant ingredient.

Elm seedlings pulled from a farmer-neighbor's ditch were transplanted into a hedge row on the back (north side). This served as a fence between property lines, a windbreak, and backstop for any possible run-off water or soil.

I got about 100 bushels of fertilizer and mulch from: 1) Keeping a compost pile; 2) wood ashes bucketed from neighbors who were burning scrap lumber after building new

homes (wood ashes are rich in potash, high in lime content, and contain phosphoric acid and magnesium); 3) raking neighbors' lawns (tree leaves are about twice as rich per pound in plant food as barnyard manure); 4) sawdust, which must be used with nitrogen, for free; and 5) coffee grounds.

Dr. M. S. Anderson, senior chemist for the USDA says: "Coffee grounds are near the equivalent of average barnyard manure. The average composition of coffee grounds is: nitrogen 2.08 per cent; phosphoric acid .36 per cent; and potash .42 per cent."

Coffee grounds double in bulk when brewed and accumulate very fast. The average person uses 20 pounds per year. They store easily or can be dumped on the soil direct. They smell nice, are clean and fresh.

Corn shucks, vegetable tops, immature weeds, and grass cuttings also make good mulch. Mulch as soon as the plants can be thinned and hoed. While on top, organic matter conserves moisture, lessens need for cultivation, and discourages weeds.

After rains, I carried pails of horse manure, crawling with earthworms, and dumped them on my plot. They helped the soil by aerating it. Aeration is very essential to this clay, heavy loam, almost gumbo soil.

She Rotates Her Plantings

Plant rotation is another cheap, sure, and lasting way to build natural fertility. I try to use plants that grow well in the soil and are good for the soil at the same time.

March 17 I had the ground chiseled and harrowed. I made the rows deeper than necessary and ran them full of water. I then sprinkled the bottom quite heavily with a commercial fertilizer, 225 pounds on 7,500 square feet, one with a 6-10-4 content, the other a 10-6-6. This put dissolved fertilizer under the seeds and into the root zone. I filled the rows in about one-quarter

(*Continued on next page*)

In 1950 Irene set 18 peppers in a row that had been part of a road. She realized $4 that year and $20 in 1953 from the same number set on the other edge of what was once a road.

UNTREATED KIDNEY BEANS

Bigger yields with **ARAMITE®**!

TREATED WITH ARAMITE
THE MIGHTY MITE-KILLER

More money for you!

There's more money for you from a better crop of beans. A small per-acre investment in Aramite can make this big dollar difference. See above the bigger and better yields you can expect with Aramite—the safest, strongest mite-killer today.

Aramite gives outstanding control of Two-Spotted Mites. It mixes well with most insect and fungus-killing chemicals, stays effective longer and is non-hazardous to humans and animals.

Order Aramite or formulations containing Aramite from your local supplier today and watch your profits grow.

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Why leading greenhouses are switching to *Modine* UNIT HEATERS

To provide air circulation that discourages fungal growth and to eliminate pipe coil rusting, Hazelager Greenhouse, Kalamazoo, Mich., installed six Modine Unit Heaters. Ground-level tomato flats are maintained at 60-65°F temperatures.

Here are 4 important advantages that mean bigger profits for you!

1. HEALTHIER PLANT GROWTH! Gentle air movement plus heat from above permits soil to remain cooler than surrounding air. Prevents most plant mold and fungal diseases. What's more—it's a simple job to zone your heating.

2. EVEN TEMPERATURES! Even under unfavorable outside conditions, Modine Unit Heaters' instant response to automatic controls maintains temperatures at ground or bench levels . . . from wall to wall. Cold spots and overheating are eliminated.

3. LOWER FUEL COSTS! Heat is delivered where and when it's needed. Ceiling temperatures are held closer to those at bench or ground level. Owners report maintaining ice seal with no inside frosting.

4. EASIER INSTALLATION! Simplified piping system with no trenching cuts costs up to 25%! And there's no more rusting of ferrous pipe coils and radiators.

ACT NOW! Get all the facts on how you can boost profits year 'round! Heat your greenhouses nature's way . . . with Modine Unit Heaters.

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Please send me immediately your new 8-page, profusely illustrated Bulletin 152-B—"Nature's Way . . . Modine Unit Heating for Greenhouses."

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U-1179

SOIL PROGRAM

(*Continued from page 25*)

of an inch with fine dirt, then planted with seeds approved by Colorado A & M College and purchased from a reputable local seed house.

If it doesn't rain soon after planting, I water and break the crust before the plants are ready to break through the soil. Because of about 120 frost-free days in the growing season; getting a head start on the bugs, diseases, and local competition; early county fair (middle of August); and state fair competition with counties having 25 more growing days, my plants have to make a good start.

This acre turned out to be supporting a mat of bindweed (convolvulus arvensis) which, due to our inexperience, had not been curtailed enough the previous seasons. We practically got rid of it this past season, however, by using two to three times the dosage recommended for spraying. I started with a brand having 56 per cent 2,4-D and tripled the amount of 2,4-D for the quantity of water called for in the directions. As this noxious weed is a perennial threat, I must keep a constant watch.

To counteract the "soil-searing" effect of 2,4-D, I added more water and between-season commercial fertilizer. The sprayed soil reacted normally in six to eight weeks.

Irene Is Champion Gardener

I've raised three gardens off this soil and have been declared champion 4-H gardener of Arapahoe County all three years. I had less trouble picking the prize-winning entries this year, proving the overall quality is improving.

I multiplied my cash income per square foot this year (1953), too. For example, in 1950 I set 18 peppers in a row that had been part of a road, packed like a pavement. I realized $4 off those peppers that year and $20 from the same number set on the other edge of the once-upon-a-time road last season.

I picked over my corn patch eight times this season (1953), contrasted with twice the first year. My plot produced at the rate of $2,400 per acre this year (1953).

I've seen the color of this soil change from a sickly yellow to a dark brown, clumps weighing 20 pounds reduced to the size of eggs, and washing water slowed to a seepage. Nature's miracles! I've constantly sought the help of experts, worked hard, and know there is still much to do and learn. I come from generations of farmer-stockmen whose hobbies have been gardens. It's in my blood. I hope it will be in my children's. THE END

SELF-SERVICE MARKET

Customers even operate the cash register at Young's roadside stand

HOW far can you trust a customer with self service? All the way, says Ralph Young, farmer of Hancock, Maine.

His "roadside stand" is just his farm truck parked where he can't see it. A big sign with the words "Self-Service" alongside the truck does the rest of the job of selling Young's sweet corn, squash, and other garden-fresh vegetables.

Young does varied farming. Actually, his biggest income is from poultry. But with his 4-H children, Sharon and Barry, growing up and taking a keen interest in market gardening, and with plenty of hen manure handy to make vegetables grow thriftily, he has expanded into the vegetable field.

He wanted to sell garden stuff direct to consumers. But, also, he didn't want to be bothered running a roadside stand or having one of the family always running out of the house to tend customers.

So he tried the help-yourself-off-the-truck idea. Young's farm is on Route 1 going east out of Ellsworth. There's a long driveway from the road to the house, which is out of sight.

Truck Serves as Stand

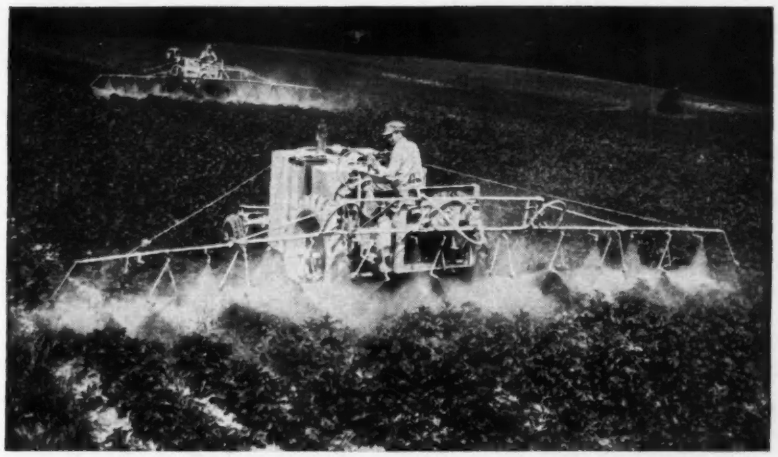
The truck is parked by the highway. There's a big scale for weighing your own squash, and the big sign saying, "Self-Service." The cash register is a little wooden box, and Young trusts customers to make their own change.

When he first tried it, in 1951, he sold $100 worth of sweet corn in five days, so he decided there was something in the idea. Nowadays, the truck takes in around $700 in a few summer weeks—and no overhead.

Young is no sentimentalist. He's pretty sure the customers are paying for the produce because he knows what goes onto the truck. And he has had some revealing experiences.

One day, late in the season, a man drove in and gave Young a dollar. "Here's the buck I owe you." He had bought some vegetables a few weeks earlier but couldn't make change.

And there's the customer who never puts a bill into the money box. He explained to Young that he always pays with coins because he would be embarrassed if seen taking money out of the box for his change. And the woman who drove back to the house with one too many ears of corn she had taken off the truck by mistake.—*William Gilman.*



For high yields and low-cost blight control...

There's nothing better than Du Pont "Parzate" fungicide. Potato and vegetable yields go up when you control blights and other diseases with "Parzate." It's a mild, effective chemical that does the job without stunting or burning . . . gives your crops vigorous growth and increased yields!

Use "Parzate" for potatoes, onions, tomatoes, celery, spinach, melons, cucumbers, beans, peppers, sweet corn and other vegetables. There's "Parzate" liquid for quick-mixing sprays, or "Parzate" dry for sprays or dust mixtures.

* * *

For many special insect-control problems use the performance-tested insecticide

"Marlate" methoxychlor does the job effectively and safely. You get both contact and residual control. Its low toxicity to humans permits use within 7 days of harvest.

On cucumbers, squash, melons, "Marlate" controls both striped and spotted cucumber beetles, squash vine borer and pickleworm without injuring these sensitive plants.

It is excellent for Mexican bean beetle and leafhoppers or snap and lima beans. On DDT-resistant Colorado potato beetles, leafhoppers and flea beetles, "Marlate" has given outstanding control.

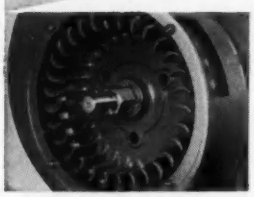
On many other crops, "Marlate" controls such insects as asparagus beetles, cabbage worms, blister beetles, flea beetles.

DU PONT
REG. U. S. PAT. OFF.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

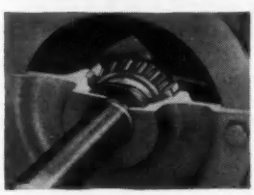
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

WISCONSIN
HEAVY-DUTY *Air-Cooled* ENGINE
Farm Power Features



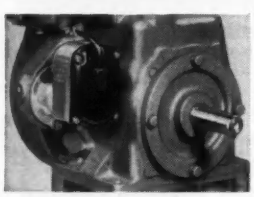
TROUBLE-FREE, ALL WEATHER AIR-COOLING . . .

No farm machine is any better than the Power that drives it. And efficient cooling, under all operating conditions, is one of the first essentials to dependable power! A large capacity fan, cast in the flywheel of every Wisconsin Engine, provides trouble-free cooling, even in the most extreme temperatures.



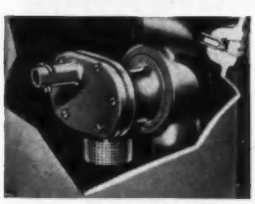
TAPERED ROLLER BEARINGS AT *BOTH ENDS* OF CRANKSHAFT . . .

These self-cleaning, file-hard bearings take up all load thrusts, permitting the use of either chain-, belt- or gear-drive direct from the extended crankshaft, without fear of damaging main or connecting rod bearings. This does away with the need for an outboard bearing.



HIGH TENSION, ROTARY TYPE OUTSIDE MAGNETO . . .

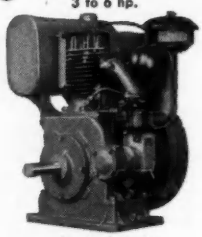
Positive gear drive direct from camshaft assures steady, uniform ignition at all times. The complete unit is conveniently mounted on the OUTSIDE of the engine for easy accessibility. Weather-sealed against moisture and dust. Equipped with Impulse Coupling for quicker, easier starting at all seasons.



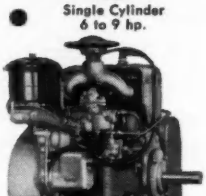
POSITIVE, PUMP-CIRCULATED LUBRICATION . . .

All single cylinder models (with exception of Model AEN) have pump-circulated level splash system. Model AEN and multi-cylinder models pump an individual oil stream to each connecting rod. Other parts are lubricated by oil spray, assuring complete and thorough lubrication for smooth-running and long engine life.

● 4-cycle Single cylinder 3 to 6 hp.



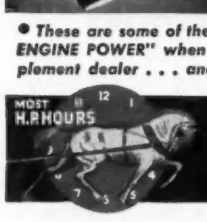
● Single Cylinder 6 to 9 hp.



● 2-cylinder 7 to 15 hp.

● 4-cylinder V-type 15 to 36 hp.

● These are some of the reasons why it pays to specify "WISCONSIN ENGINE POWER" when you buy new farm equipment. See your implement dealer . . . and write for free descriptive literature.



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MILWAUKEE 46, WISCONSIN

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Add to your income by selling AMERICAN VEGETABLE GROWER. It's a logical combination for AMERICAN VEGETABLE GROWER will help your customers get the best results from the seed you sell them. *Make every call pay!* This means additional cash for you regardless of whether you sell a seed order or a subscription to AMERICAN VEGETABLE GROWER.

Write today for our liberal, seed agents' plan. Address:

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106 Euclid Ave. **AMERICAN VEGETABLE GROWER** Willoughby, Ohio

NEW VARIETIES

Introductions include two tomatoes, onion, and squash

BOTANISTS at Ohio Agricultural Experiment Station, Wooster, Ohio, recently announced they have developed a new tomato variety resistant to fusarium wilt disease.

Known as Ohio W-R Brookston, it is a red-fruited type intended for processors and home gardeners. It matures a few days earlier than Rutgers. Brookston is large, has a deep red color, and is exceptionally high yielding. In one year at the Wooster station yields were 36 tons per acre or 25 per cent higher than Rutgers. Tests also showed Brookston to be less affected by dry, hot weather.

L. J. Alexander, who conducted most of the research leading to the new tomato, says he found the source for fusarium wilt resistance in a wild currant tomato native to South America.

Chesapeake Tomato

Chesapeake is another new fusarium wilt resistant tomato just introduced. It bears heavily until frost, and since little or no cracking of the fruit occurs, molding is minimized.

The fruit is irregularly multilocular, has uniform fruit color when unripe, and develops an even color at maturity. First picking is three to seven days later than Rutgers.

In canning tests Chesapeake was equal in wholeness, firmness, and color to Rutgers. For canning as whole tomatoes, there is little loss from Chesapeake because of the small amount of fruit cracking.

Chesapeake was developed and released by the Maryland Agricultural Experiment Station under the guidance of Dr. Francis C. Stark. It comes from a three-way cross involving Brown's Special, Marglobe, and Pan American.

Seed is available from Associated Seed Growers, New Haven, Conn.;

Chesapeake tomato produces quality fruit until frost. Fruit is of uniform size and color.

Storrs Green Hybrid is the first F_1 hybrid among summer squash to show true hybrid vigor.

W. Atlee Burpee Co., Philadelphia 32, Pa.; Gleckers Seedsmen, Metamora, Ohio.; and F. C. Stokes Co., Vincentown, N. J.

Summer Squash

Storrs Green Hybrid is an improved Zucchini-type summer squash. This early, productive F_1 hybrid was developed by Storrs Agricultural Experiment Station, Storrs, Conn. Parents are two commercial varieties, Caserta and Salerno.

Fruit of Storrs Green Hybrid is uniformly cylindrical like the Salerno parent. At edible stage the color is a uniform dark green. Although the striping character of Caserta persists in the F_1 hybrid, it is not apparent in the young edible fruit but is visible when fruits become large and mature.

Storrs Green Hybrid is the first F_1 hybrid among the summer squash which shows true hybrid vigor.

Aristocrat Onion

A new onion hybrid has been developed by USDA's agricultural research staff. Breeders have named it Aristocrat, apparently because of its high yielding ability and certain qualities which adapt it to fall and winter storage.

In tests on muck soil at Celeryville, Ohio, Aristocrat produced more than 1,000 50-pound bags per acre, which was more than 50 per cent higher than yields of Brigham Yellow Globe, the present standard storage variety.

The shape of Aristocrat is a high globe, its flesh is firm, and yellow scales adhere well throughout a long storage period. It will keep through early March. Stored onions indicated no sprouting, very little rotting, and no root growth at the stem plate.

J. P. Sleesman, entomologist at the Ohio station, said Aristocrat is the first commercial storage-type hybrid onion developed by government research agencies.

Seed for planting in 1955 will be made available to the general public by commercial seedsmen. THE END

You'll pack a heavier, premium crop of sound, good-keeping potatoes by regularly applying Niagara C-O-C-S to your fields. This superior fungicide effectively prevents blight and actually encourages the natural growth of potato plant foliage.

Niagara C-O-C-S is finely milled. It has smaller toxic copper particles than ordinary dusts. This means you can cover the foliage more thoroughly, and with greater adhesion to resist wash-off by rain. C-O-C-S mixes readily as a spray, flows freely as a dust and sticks to wet or dry foliage. Either way you'll find it covers the crop with a minimum of pounds per acre for maximum protection and economy.

For professional advice as to timing, rate of application, and methods to assure maximum results, ask your friendly Niagara man. There is one of these trained specialists in every neighborhood. Write us and he will see you.

50 YEARS OF SERVICE

C-O-C-S GIVES SUPERIOR BLIGHT CONTROL ON VEGETABLES

Use it to safely protect your other crops such as tomatoes, cucumbers, melons, peppers, squash, lima beans and celery against disease attack. Either dust or spray.

Niagara CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Middleport, N.Y. Richmond, Calif., Jacksonville, Fla., Tampa, Fla., Pompano, Fla., Wyoming, Ill., New Orleans, La., Ayer, Mass., Greenville, Miss., Harlingen, Tex., Pecos, Tex., Yakima, Wash. **Subsidiary:** Pine Bluff Chemical Co., Pine Bluff, Ark. **Canadian Associate:** NIAGARA BRAND SPRAY CO., LTD., Burlington, Ontario.

WHEN YOU BUY Niagara YOU BUY PROTECTION fmc Trade Mark

NEW LOOK IN POTATOES

(Continued from page 9)

"Frying" potatoes. In this study no premiums were charged for the sorted potatoes compared with the regular lots of unsorted potatoes.

During the 1949-50 season tests were run for an 18-week period in two large supermarkets in Ithaca, N. Y. In this study separation of the potatoes was done manually. In one store potatoes sorted by specific gravity accounted for 25 per cent of total potato sales and in the second for 12 per cent. This pilot plant study made it clear that something better than an arduous manual separation of potatoes was needed if an adequate supply of sorted potatoes was to be made available for experimental studies on a commercial scale.

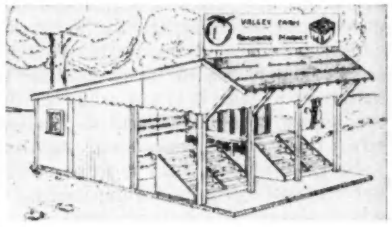
By the fall of 1951 a specific gravity machine, based on the Colorado Agricultural and Mechanical College plans, had been built by the vegetable crops and agricultural engineering departments at Cornell at an approximate cost of $800 and installed on the large potato farm of Willard and Stuart Allen, Waterville, N. Y., two of the topnotch potato growers in New York state. In addition, a large washer and oil-heated dryer made by the Aeroglide Corp., Raleigh, N. C., was attached to the specific gravity machine together with a large sorting and bagging contrivance to handle 10-pound lithographed bags. All told, the investment in equipment approximated about $9,400 when the experimental sales began.

Two Studies Made

Two six-week studies were made in six Syracuse, N. Y., supermarkets, during the period November, 1951, through February, 1952. The experimental potatoes were separated only into "Bakers" and "Boilers". Potatoes with a specific gravity of 1.08 or more were classed as "Bakers;" all others were "Boilers." During this experiment, consumers freely exercised personal choice in selecting potatoes without any ballyhoo or advertising—"selling the hard way," as one store manager put it. Between 24 to 30 per cent of all potatoes sold in these six stores (which averaged about two tons per store per week) were either experimental "Bakers" or "Boilers," despite the fact that five- and 10-cent premiums (per-10 pound bag) over regular potatoes were charged after the first two-week period.

It was recognized, of course, that the 1951 potato crop was small and high priced and that these studies would have to be continued for four or five more years to see what effect

This roadside market, conveniently located so the motorist can readily stop, will make it easy for you to take care of customers quickly. Movable racks make it possible to maintain an



attractive stand in accordance with supply and demand, and the overhanging roof affords protection for the customer. Working drawings for this easy-to-build stand are available for 50 cents from AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

Eliminate costly handweeding of onions with

AERO* CYANATE

WEEDKILLER

With hand labor costly and hard to get, more and more onion growers are weeding *chemically* with AERO Cyanate. Production costs are substantially lower, you save time and trouble as well as money.

Sprayed on young weeds, Cyanate kills them on contact, permitting the onion crop to grow to full size unhampered by choking weeds. Cyanate is water-soluble, easy to apply. Breaks down to form compounds containing ammonia and potash. Will not stain work clothing. Equipment cleans easily with plain water.

Write today for free booklet containing complete information.

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large or medium-sized crops might have on consumer purchases of "Bakers" and "Boilers." The study was therefore continued during the fall and winter of 1952-53 in the same stores in Syracuse, N. Y. During this second series of studies, however, at the suggestion of both grower and retailer, the experimental potatoes were put up in peck (15-pound) bags as were most other potatoes in the stores.

Although the 1952 potato crop was also relatively short and prices were comparatively high, experimental lots of "Bakers" and "Boilers" accounted for 25 to 35 per cent of all potatoes sold in these stores during the first six-week period, and from 26 to 32 per cent during the second six-week period, even though premiums of 10 cents per 15-pound bag on "Bakers" and six cents per bag on "Boilers" were charged a good share of the time.

What Does It All Mean?

It's too early to draw definite conclusions, and tests in retail stores should be run through at least one large crop season like 1953 as well as through some medium-sized crop years.

These demonstrations of how consumers have bought and paid for potatoes, however, seem to suggest that about one-third of the customers in these representative supermarkets are interested in having potatoes available which *will* fill specific needs, on which they can rely, and furthermore that they are able and willing to pay for them.

Promising Development

One of the promising developments has been the interest taken by produce clerks in these experimental potatoes. When the experiments are over and the "Bakers" and "Boilers" are no longer available, these clerks tell us that quite a few customers want to know "how come;" and in the fall the same customers want to know when they will have some of those "Bakers" and "Boilers" in again.

Can it be that the upper third or so of our population has been going easy on potato consumption because they couldn't find the kinds of potatoes they wanted at what they considered reasonable prices? If Mrs. Consumer gets the kind of potato product she wants and is able and willing to pay for it will the downward trend in potato consumption be halted or even reversed? These are the $64 questions! Like the late Will Rogers, the author never bets over 35 cents on anything, but he would bet at least that on an affirmative answer to the above two questions.

Who Can Do The Job?

As this is being written, about $7,500 worth of equipment would be required at present day prices to do a proper job of sorting potatoes by the specific gravity method, wash them, dry them, and pack them. Such an outlay would probably limit its use to growers or shippers of relatively large quantities of table-stock potatoes or to centralized packing houses where a large volume of potatoes could be handled daily throughout the normal potato marketing season. It also seems likely that a more aggressive merchandising program would be needed—something the whole potato industry sadly lacks! THE END

A reader writes, "Nowhere other than in AMERICAN VEGETABLE GROWER can I find advertised such a wonderful variety of equipment and products that the grower needs." Read the advertisements and remember advertisers will be glad to send you catalogs, specifications, and prices. Be sure to say you saw it in AMERICAN VEGETABLE GROWER.

FRIEND fits into your picture too!

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MANUFACTURING CO., INC.
4 Main Street
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FRIEND Row Crop sprayers give you thorough coverage; simplified one-man operation; sturdy, dependable service for year after year of blight-, pest-free crops. Get into the premium-crop picture with America's premier sprayer.

Please send me information on your row crop sprayers.

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You can MEASURE the difference in yields and quality!

VIGORO* COMMERCIAL GROWER

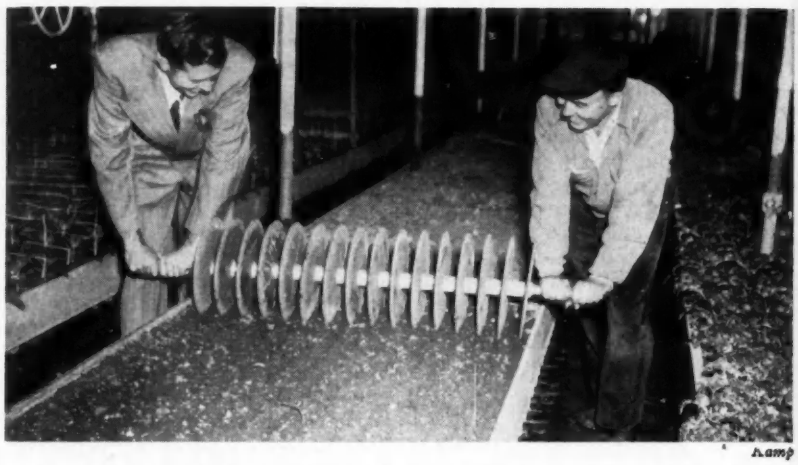
. . . a special formula geographically adjusted for the soils in your area

Vigoro for Commercial Growers is made to supply the maximum nutrient requirements of high value crops. All needed nutrient elements are skillfully balanced in maximum ratio to each other. Predominating soil types in your area have also been considered in its formulation.

With Vigoro CG you get maximum yields that command top of the market prices. For full information, just drop us a card, mentioning your special crops. Address:

Swift & Company
Plant Food Division
U. S. Yards, Chicago 9, Illinois

*Vigoro is the trade-mark for Swift & Company's complete, balanced plant food.



Lamp

McFarland uses a soil firmer. It is made of 16 quarter-inch steel discs spaced three inches apart on one-inch pipe with one and one-quarter-inch sleeves. It weighs about 150 pounds, is maneuvered by two men. One round to the bench sufficiently firms the sand and peat mixture. The discs sink in to a depth of about three inches, thus firming bottom of bench well, an important item to consider.

Saving LABOR *in the* Greenhouse

Illinois grower adopts new cultural system and streamlines all operations

FRANK McFARLAND of Libertyville, Ill., has a little more than an acre under glass. While he is a grower of flowers, many of his laborsaving ideas are equally applicable to greenhouse vegetable growing.

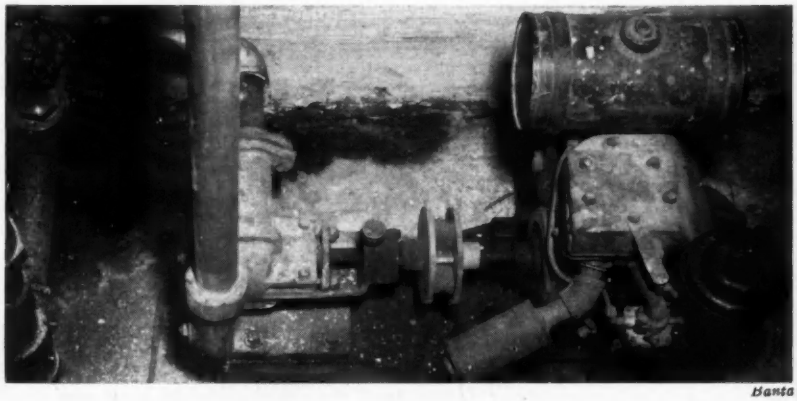
The soil, or the medium in which plants are grown, is the place to begin streamlining your plant-growing operation, McFarland suggests. He abandoned soil several years ago and has been using a 50-50 mixture of sand and peat. He decided on this mixture partially because he wanted to develop a nutrient culture system.

McFarland's cultural system works something like this: When he gets ready to mix a batch of media he calls in a local concrete mixer to do the job. This saves time, and the mixing of sand and peat is thoroughly done. The mixture is piled outdoors until ready for use. Benches are filled, then firmed with tool shown above.

After plants are set, or the seed is sown, benches are watered with a nutrient solution. The formula is mixed according to the type of plant being grown, and the benches are watered by hose with the solution.

Among the advantages of this system of greenhouse plant growing over the use of soil McFarland includes these: Mixture in benches does not have to be replaced as often; water and nutrient level can be held constant for best growth of a given kind of plant; mixture is more easily cared for and worked; it costs less; wooden benches last longer; less labor is required.

Frank McFarland must have things pretty efficient, since he operates 46,000 square feet of glass with only three regularly employed men.



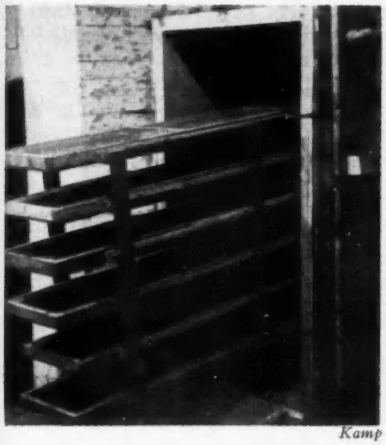
Hanta

Gasoline engine and pump are mounted in the water line to the greenhouse from the boilers. In case of power failure the pump is started and the hot water circulated through the greenhouse. It is a safety precaution McFarland has had to use only once, when the power was off for 55 hours.

Soil sterilizer able trays o chamber for or for meth plants can

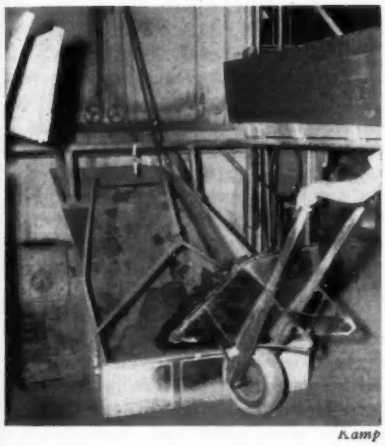
McFarland bo mixer; it make a large scoop loads of coal, tached the rec A flip of the then flows d

Over the scoop form to stand form folds up as shown in th form makes cle



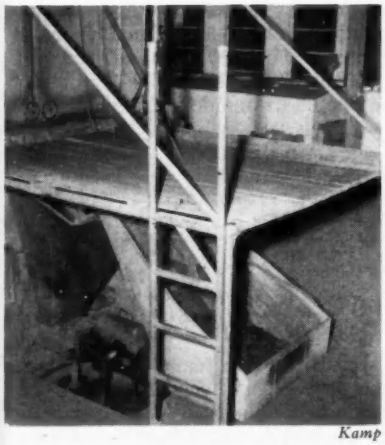
Kamp

Soil sterilizer-fumigator. Roller rack has removable trays or flats which are easily rolled into chamber for steam sterilization of soil or media or for methyl bromide fumigation. Trays of plants can also be rolled in for fumigation.



Kamp

McFarland borrowed this idea from a concrete mixer; it makes firing the boilers easier. He built a large scoop which holds five wheelbarrow loads of coal, hinged it next to the boiler, attached the rear end of it to a small chain hoist. A flip of the switch raises scoop of coal which then flows directly into the stoker hopper.



Kamp

Over the scoop McFarland built this hinged platform to stand on while cleaning the flues. Platform folds up out of the way when not in use, as shown in the center photograph. This platform makes cleaning flues a safe and easy job.

Attention — Onion Growers – – –

This illustration is a side view, where a light tractor has a four row comb weeder mounted behind the front wheels—at the right. The right hand weeder unit and its work can be seen. The flexible rotary comb rakes through the row and on account of the weeds being more shallow in the soil than the onion, it is possible to rake these weeds out. In loose soils this comb weeder does 99% perfect job. The cultivation in the row is valuable enough alone to justify the use of this weeder. Users will tell you that sprays do not eliminate the necessity of this weeder's use.

We also have a wire weeder attachment to use on certain other conditions and crops in place of this great comb weeder. It is useful on gladioli bulblets, asparagus and small tree and flower seedlings—and a spacer or thinner attachment used on lettuce, spinach, etc.

Attention — Onion, Carrot, Red beet, Potato and Radish Growers – – –

Send for literature and reports from users on this great labor saver and also on the Bruner Rotary onion Puller and the Bruner combination Vegetable Harvester—also set Toppers and radish Toppers and Combines.

A FARMERS BEST INSURANCE AGAINST LOSS ON ACCOUNT OF LOW PRICES IS LABOR SAVING MACHINES. In a tooth and claw situation the farmer with the most complete battery of labor saving machines and this "know how" is the one who survives.

We were unable to fill late orders of weeders last year. We are now making up a stock for this season. Please order now to insure timely delivery.

We would like to have the opportunity to be of service to you.

Farm Implement Specialty Sales Co.

22516 Hoover Rd., Dept. 2. Van Dyke, Mich.

BOOKS FOR YOUR HOME LIBRARY

VEGETABLE GROWING *by James S. Shoemaker.* Discusses individual vegetables, time and depth of planting, harvesting, and marketing. Every vegetable grower should have this 515-page, well-illustrated book in his library. $6.00

FARM MECHANICS TEXT AND HANDBOOK. An encyclopedia of shop and mechanical jobs for the farm. Information on tools, machinery, motors, wiring, and painting are contained in its 774 pages.....$4.50

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Reader Service Department
Willoughby, Ohio

High Pressure SPRAY HOSE

800 Lbs. Working Pressure

Flexible, High Pressure Horticultural Spray Hose. Resistant to Oils, Chemicals, Insecticides and all D.D.T. Sprays.

Each length complete with High Pressure Couplings attached to fit all Pressure Sprayers.

Hose is New, First Grade, Guaranteed!

LENGTHS AVAILABLE	INSIDE DIAMETERS 3/8"	1/2"	3/4"
25 ft.	$ 9.00	$10.25	$15.75
50 ft.	16.50	19.00	29.50
75 ft.	24.00	27.75	43.25
100 ft.	31.50	36.50	57.00

Postpaid If Cash or Check With Order

Agricultural Rubber Products Corp.
61 Barclay St. P. O. Box 496
New York 7, N. Y.

COVER CROPS

(Continued from page 11)

gleaned from analysis of soil samples and of plant tissues from some 2,000 acres of spinach. In this way it was found just where the fertilizer went after it was applied.

Previous to 1947 all the fertilizer was being applied directly to the spinach crop, and at rather heavy rates. Since 1947 most of the fertilizer has been applied to the cover crop preceding spinach. Applications were made according to the soil tests and plant growth. The objective was to control soil fertility levels as well as possible and to increase and stabilize the crop yield.

Table II shows results, before 1947 and after 1947, an average in each case being considered.

Table I—Yield in Pay Weight per Planted Acre

Treatment	Peas Lbs.	Lima Beans Lbs.	Fordhook Lbs.	Snap Beans Lbs.	Sweet Corn Tons
4 yr. ave. 1945-48. No fertilizer on cover crop	2363	898	1027*	2916	2.71
4 yr. ave. 1949-52. Cover crop fertilized	2494	1409	1692	5661	2.84

* Yield for 1948 only.

Table II—Comparison of Yield of Fertilized and Non-fertilized Cover Crop

Treatment	Yield tons Per A.	Pounds applied per acre N	P	K	Pounds removed in harvest Total	N	P	K	Pounds in residue and lost N	P	K
4 yr. ave. 1943-47. No fertilizer on cover	4.77	619	243	162	1024	48	10	48	571	233	114
6 yr. ave. 1947-52. Cover crop fertilized	5.25	281	106	96	483	52	12	52	229	94	44

Soil Testing

The establishment of the soil testing laboratory at Seabrook Farms several years ago and the perfecting of testing techniques have helped immeasurably to bring about the crop production changes discussed. At present about 18,000 soil samples are run through the laboratory each year, all from Seabrook Farms or farms under contract to produce vegetables for the firm.

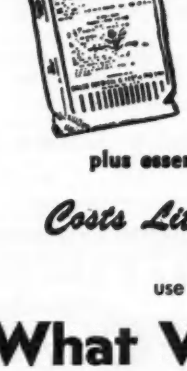
A soil test reveals what elements and the quantity of each that are available to growing vegetables. Knowing how much of each element will be removed in the harvest at a given yield and how much will be lost in one or more ways, Dr. App has been able to predict pretty closely the amount of fertilizer needed by each crop.

With some crops only one or two soil tests are necessary during the year. With others, as beets, carrots, spinach, and broccoli, testing at weekly or 10-day intervals becomes necessary. Nitrogen is one of the critical elements tested for at regular intervals, since it has so much to do with continuous growth and high yields. It is an element that may vary in its amount and availability to the growing crop from week to week. So, frequent tests can tell the operator if and when he may need to make a side dressing. And this is the only time side dressings of nitrogen are now made. These are only light applications, usually made by airplane, and for the purpose of carrying the crop through a critical period, as when nitrogen may be temporarily short in the soil.

The principle of cover crop fertilization plays a part in determining the rotations to be followed on the various farms, but it is by no means the only criterion. Here is a six-year rotation now in effect on one farm:

Vegetable Crop	Cover Crop
1) Sweet corn	Barley
2) Peas followed by spinach	Rye
3) Miscellaneous vegetables	Spring oats & clover
4) Cover crop and spinach	Seed grain
5) Sod crop	None (carry-over)
6) Snap beans followed by spinach	Rye

In all but one year out of the six, one or two cash vegetable crops are produced annually. With well grown cover crop plus nitrogen plowed down with that cover in the spring, we can readily see some logic to the "fertility standards" program at Seabrook Farms. THE END



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plus essential secondary elements

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NEWS FROM YOUR SUPPLIERS

YOU may obtain free copies of the 36-page booklet with 22 illustrations called, *"You Can't Argue with Weeds,"* from Chipman Chemical Company. In handy pocket form, the booklet tells about chemical weed killers and which ones to use for which weeds. Write George W. Case, **Chipman Chemical Company, Inc.,** Bound Brook, N. J.

For answers to 28 questions regarding sprinkler irrigation as well as up-to-date information on portable sprinkler irrigation write for the 24-page booklet, *"What You Should Know About Portable Sprinkler Irrigation."* It may be obtained from David C. Dickey, Shur-Rane Dept., John Bean Division, **Food Machinery and Chemical Corporation,** San Jose, Calif.

The Germain Seed and Plant Company announces the acquisition of the seed coating business of the Filtrol Corporation as of January 1, 1954. The Staff that operated the seed coating processes under the Filtrol management was taken over intact by Germain's. Any seeds sent for coating should be addressed to **Filcoat Division,** 687 S. Clarence St., Los Angeles 23, Calif.

In order to correctly plan your sprinkler irrigation system, use the check sheet and diagram made available by R. M. Wade & Co. Called *"Farm Facts Information Form,"* the grower will find the simple tabulated guides enable him to list all the essential facts about his farm likely to affect the operating efficiency of his contemplated sprinkler irrigation system. Write Robert M. Morgan, Head, Irrigation Div., **R. M. Wade & Co.,** Portland 9, Ore.

T. J. Lockwood, president of **Lockwood Grader Corporation,** Gering, Nebr., manufacturers of a complete line of potato and onion handling machinery, appeared on the program of the international potato meeting held in February at Hamburg, Germany. While in Europe Mr. Lockwood will visit the major potato areas in Germany, France, and the Lowlands and plans to study at first hand their potato growing and marketing practices.

One of the keys to success in hiring good intelligent workers and holding them from year to year is attractive, comfortable housing. Send $1 for working drawings showing construction details of 3-Room Tenant House, which can be arranged in single or double units, to AMERICAN VEGETABLE GROWER, Plans and Booklets Dept. Willoughby, Ohio.

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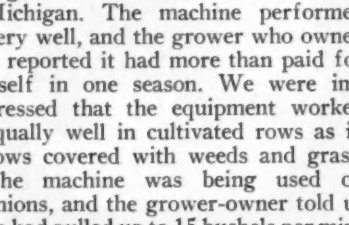
They Do More Work

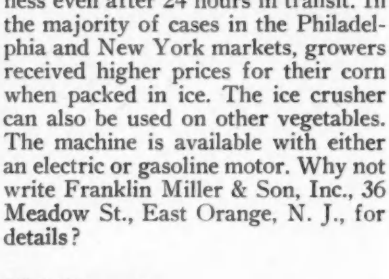
Not long ago we saw the Bruner vegetable harvester at work in Michigan. The machine performed very well, and the grower who owned it reported it had more than paid for itself in one season. We were impressed that the equipment worked equally well in cultivated rows as in rows covered with weeds and grass. The machine was being used on onions, and the grower-owner told us he had pulled up to 15 bushels per minute, taking a two-row windrow. Bruner harvesters are ideal for onions, carrots, red beets, turnips, and potatoes. What's more important to vegetable growers is the low cost of Bruner machines. Why not write R. G. Bruner, Farm Implement Specialty Sales Co., 22516 Hoover Rd., Van Dyke, Mich. Mr. Bruner will be glad to send you his folder and catalog without obligation.

Ice Sweet Corn



The New Jersey Agricultural Experiment Station was the site of tests for a new ice crusher designed for the small grower. It is used to ice sweet corn which is packaged in wet strength bags. The machine automatically measures the crushed ice and loads it into the bags. Tests showed that corn packaged in ice lost very little sweetness even after 24 hours in transit. In the majority of cases in the Philadelphia and New York markets, growers received higher prices for their corn when packed in ice. The ice crusher can also be used on other vegetables. The machine is available with either an electric or gasoline motor. Why not write Franklin Miller & Son, Inc., 36 Meadow St., East Orange, N. J., for details?

'54 Farming



Growers will want to see the new, greatly improved International tractor line for 1954. The most impressive feature on the new tractor is the torque amplifier. The new International tractor transmission gives the grower finger-tip control. Shifting is automatic. In fact, the new torque amplifier gives the grower 10 forward speeds and two reverse speeds. For descriptive literature, write Hal Wright, International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.

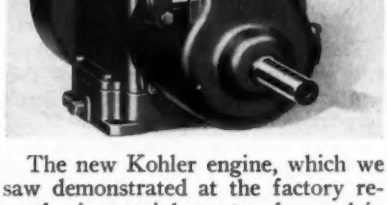
Protected Thermostats

Too many times greenhouse or plant bed thermostats have been ruined by moisture or corrosion. The new Thermoswitch is completely enclosed in a plastic sleeve and can be set to operate within a range of +10 to +165° F. These new thermostats can handle a current load of 10 amps at 115 volts AC or five amps at 230 volts AC. Why not write T. R. Eilenberg, Fenwal, Inc., Ashland, Mass.?

Kohler Clutch

The new Kohler engine, which we saw demonstrated at the factory recently, is certainly a step forward in making Kohler power plants more useful to the vegetable grower. The new six h.p. motor comes with a hand clutch. Imagine the use of such a motor on your garden tractor, sprayer, or vegetable grader. Write R. C. Angelbeck, Kohler Company, Kohler, Wis.

Visibility Unlimited



Recently we saw an attractive crystal-clear plastic tomato tray-pack which will not wilt under refrigeration. The new pack is made in two sizes for packing three or four tomatoes. It permits complete examination by the consumer without touching the tomatoes. The container, which is almost air-tight, insures longer life for your tomatoes in the store. "Seequal-Pak" cradles the tomatoes above the surface level, which means less bruising. Side rails are sufficiently resilient to prevent damage in handling, loading, stacking, or transporting. Why not write Joe Murphy, See-Qual Package Corp., 100 Warren St., New York, N. Y.?

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Only 25c a word for one-time insertion; 20c a word for two-time insertion; 15c a word for four-time insertion—CASH WITH ORDER. Count each initial and whole number as one word. ADDRESS AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

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AMERICAN SPECIALTY BUNCHED TOP washer. 5 H.P., 220 volt. Used one half hour. Cost $1800—price $1000. F. J. WITHERLY, Finson Rd., Bangor, Maine.

LATE MODEL SPEED SPRAYER FOR SALE. Any reasonable offer. BOX 54, Fairhope, Ala.

SLIGHTLY USED 8 ROLL BRUNER ONION harvester. Excellent condition. Discontinued raising onions. HERBERT MUELLER, Route 1, Box 205, Desplaines, Ill.

HARDIE SPRAYER—LIKE NEW—35 G.P.M., 500 gal. wood tank trailer type, engine driven, all overhauled and painted. PACKER'S ORCHARD, Adena, Ohio.

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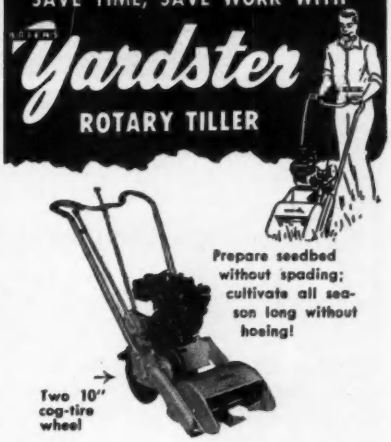

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Family garden package. 50 blooming bulbs, all colors, 12 varieties. Assorted sizes for continuous bloom. $1.50, 2 for $2.50 postpaid. Send for list.

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VEGETABLE CROPS *by Homer C. Thompson.* An up-to-date book which covers such subjects as plant nutrition, weed control, nutritional value of vegetables, recent advances in handling and marketing vegetables, cultivation, irrigation and storage. 611 pages and many illustrations. . . . $6.75

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Bright Spots in the Potato Picture

A. E. MERCKER of the USDA keeps close tab on the potato outlook and what changes are taking place. He recently released the interesting information that French fried potatoes are now the second-ranking frozen vegetable, exceeded only by peas in retail sales.

The trend of consumption shows that the amount of potatoes being eaten as frozen French fries is increasing by about 25 per cent a year. The amount now used this way is about the same as was used for potato chips 25 years ago.

And speaking of potato chips, here is a phenomenal story. In 1952, the potato chip industry used 25¼ million bushels of potatoes for chip making. In 1953, the amount used went up to 28½ million bushels.

The total quantity of potatoes used in all processed food forms reached an all-time high of 31,769,000 bushels in 1952 or about 12 pounds per person. Last year a new record was set when 15 pounds per person were consumed in processed form. In addition, about two and one-half million bushels of prepeeled potatoes were consumed last year mainly through restaurants, hospitals, and other institutional users.

Market Gardening

IN this age of big business operations we sometimes wonder just where the small grower fits into the industrial and agricultural picture. From many viewpoints he is at a distinct disadvantage. He is limited in capital with which to develop and expand his business enterprise, and sometimes it is a problem even to keep going.

By the nature of his business the small grower must be located near a town or city and hence his real estate taxes and labor costs are high. His land area is also limited, so he must make every square foot produce as great a yield as possible. Operating on a small scale, he does not have the advantages in buying supplies in large quantities at some discount, as does his counterpart, the large vegetable grower. He often runs into the problem of very high overhead for the volume of business he is doing.

You might call this the plight of the market gardener. At times it seems that he is doomed and eventually must let go and turn the business of vegetable growing over to the large grower. However, after considering the problems and difficulties involved, it is evident that the market gardener still has some advantages which cannot be enjoyed by the large-scale operator. Once he has command of his advantages, the market gardener can and must perform his job to the best of his ability.

One of his choicest advantages is his closeness to consumers. A goodly portion of his produce can be delivered into the consumer's home the day it is harvested, and most of it the day following. What an opportunity for consumer education lies before him! Producing prime quality vegetables the market gardener has the opportunity to place that prime quality right in front of Mrs. Consumer's eye. Many tests of consumer buying habits reveal that a large share of purchases in the produce department are made by eye-appeal of the display. In a few instances we have heard of the grower going right into the store and helping set up an attractive display of crisp, fresh vegetables. The market gardener must build up a large and lasting demand for his produce. The ways are many and varied.

On the growing end, the market gardener may find an advantage in growing certain varieties that possess exceptional quality or can be used for a specific purpose. He has to be a keen observer of varieties and to keep testing new and different ones. His customers know him and look to him for the very best, so he must let no grass grow under his feet in finding it for them. Experience has shown that customers are quick to respond to a new product—provided it is good or exceptional.

The small grower can give close supervision to the details of each job. This may or may not be a distinct advantage, depending upon the individual. Some growers get along much better with people than do others. At least the privilege is his if he can utilize it.

There may be some disagreement about the next advantage of the market gardener. Being a small producer, he has the advantage of developing much of his own equipment, that is, additional to the basic. You might object by saying that he doesn't have the money and the machinery with which to build tools. But the market gardener does not require the big, heavy pieces of equipment needed by the truck farmer to economize his operations. He needs more small items to make his jobs easier and more efficient. Perhaps this is where the ability of the man himself plays a major role. Can he work out ways to improve his field work, his harvesting jobs, his handling jobs? Many times it means the investment of only a few dollars and a few hours of labor.

It might seem that the skilled and successful market gardener today is a cross between a horticulturist and a mechanic.

Parade Marches On

EVERY week it seems that new findings which vitally affect vegetable growers are revealed through research. To illustrate the point, news has just come in that chemical treatments to control soil wireworms, developed by USDA entomologists, mean tremendous savings to growers of vegetables, especially on irrigated soils. DDT, ethylene dibromide, and D-D mixtures are the pesticides used.

In one California county, bean yields on 6,600 acres treated with 20 pounds of 50 per cent DDT per acre averaged 400 pounds per acre more than yields on untreated soil. Savings to growers were estimated at $550,000 the first year.

Since DDT remains effective in the soil for four years, the treatment resulted in a production increase worth about $2 million in this one county on a single crop. That amounts to roughly twice the cost of all the bureau's research on wireworms from 1924 to date.

FIND OUT FOR YOURSELF

why so many Market Growers Choose

JOHN DEERE "40" TRACTORS

HAVE you had a chance to become really acquainted with a John Deere Model "40" General-Purpose Tractor?

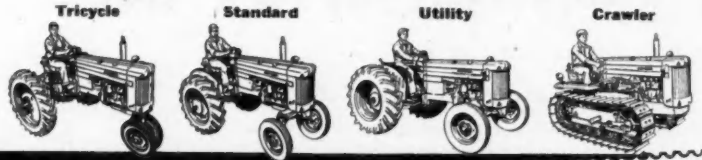
You have read about them . . . you've probably heard owners remark about their amazing power for their size . . . their low operating costs . . . their wide variety of pickup tools for the 3-point hitch . . . and the way they speed up farming jobs and make hard work easy.

But there's only one way to really get to know the many John Deere advantages, and that's by actually driving one of these good-looking, good-performing tractors on your own place. You must see how this eager new power handles two 14-inch plow bottoms or a 6-foot double-action harrow in most soils, how the Load-and-Depth Control automatically maintains working depth, and how the "live" Touch-o-matic hydraulic system takes all the muscle work out of lifting and lowering.

What's equally important to you is the ever-growing line of matched integral working equipment, built by John Deere to handle your most particular jobs. The scene at top shows the One-Row Cultivator on a "40" Standard Tractor working in tomatoes. Middle scene shows the Multi-Row Cultivator on a "40" Tricycle Tractor doing big-capacity work in beans. Bottom scene shows one of the "pickup" type double-action disk harrows making a deep, mellow seedbed behind the "40" Standard.

Just ask for a date to test-drive the "40" of your choice—that's all you have to do.

NOT JUST ONE MODEL . . . You Can Choose the "40" That Fits Your Needs Exactly



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